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6

Wars from the Purānās to Panipat and Plassey

The four *purānās* – *Vāyu*, *Matsya*, the later *Vishnu* and the still later, *Bhāgavata*, according to Bhandarkar (1985) contain information about several dynasties who ruled at different periods as well as the number of princes belonging to each dynasty and the length of each one's reign. For example, the duration assigned to the Mauryan dynasty founded by Chandragupta is recorded as 137 years.

Western scholars believed that the history of India was chronicled and recorded only after the Mauryan dynasty began and was written by travellers from outside the land.

In the Mauryan dynasty, there were 9–10 princes according to Maxmueller, deriving chronological information from Alexander's time (Bhandarkar, 1985, p. 30). King Asoka (273–232 BC) of the Mauryan dynasty was the greatest of all the ancient emperors. His might and rule extended from Kapurdigir in Yūsafzai country to Dhauli in Cuttack, from Tirhut in the north to the Gujarat peninsula in the west. His concern for his subjects and his warcraft were said to have been phenomenal. However, little remains of the history of his time. There are only rock edicts to go by after he spurned his Hindu religion and violence and entered a life of piety and peace under Buddhist order. Due to this shift to another religion, the Hindus declined to keep any record of his reign in India (Mitra, 1969, pp. 407–426). He was thought to be a renegade from the religion of his ancestors and since Buddhists were also expelled from the country, Asoka's name and fame could not be kept alive.

After the decline of the Mauryan dynasty, the Sunga family was founded in around 185 BC producing around ten rulers and reigning over the next 112 years as per all the purānās (Bhandarkar, 1985, p. 30). The Kanvas or Kanvayanas began their dynastic rule (73 BC) and reigned with four princes for 45 years. At the same time came Andrabhrityas (Satavahanas and Salivahanas) in Maharashtra, who lasted for around 411 to 456 years or even 460 years, bringing great prosperity to the land by way of trade, commerce, better administration by trade guilds (Bhandarkar, 1985, pp. 41–42).

There is virtually no mention or description of wars in these chronicles but by this time Kautilya *ArthaŚāstra* and his description of the art of war had been in existence for some centuries and one supposes that throughout the reigns of the various dynasties, the principles and the codes of war enunciated by Kautilya were followed. For our purpose, we should perhaps look at the Chalukyas (Chalika or Chalukya), the life of whose legendary Prince Vikramaditya was described by Bilhāna in his *Vikramānkadevacharita*. Copper plate grants indicated that the Chalukyas descended from Hariti and belonged to the Mānavya Gotra. The god Kārtikeya led them to prosperity and they fought under a standard showing a boar and were successful in subjugating all kings. Bilhāna's writing and the copper plate engravings from Yevur and Miraj both agree that Ayodhya was the original seat of the family, which in course of time established a branch in the South (Bhandarkar, 1985, p. 48). In the reign of King Pulakesi (son of Kirtivarman) from 535 *saka* or AD 611, there was an attack by a prince probably belonging to the Rashtrakuta race. Though the latter attacked with his army of horses brought in from the northern areas, his strength did not match Pulakesi's powerful army and therefore chose to become his ally. There were continuous battle engagements all across

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the south, first with the Kadambas reducing their capital Banavasi, then with the Ganga family of the Chera country (near modern Mysore) and then the head of Alupa holding the provinces of Malabar, vanquishing both and forcing them into becoming allies. There was a powerful navy in war, where hundreds of ships launched an attack on Puri (called the Lakshimi of the western ocean) which was probably the capital of the Mauryan king of Konkan and afterwards of the Silaharas (Bhandarkar, 1985, p. 51 and footnote 4). Pulakesi also defeated the kings of Latu, Malava and Gurjara and became their siege lord. The king of Kannauj, a powerful monarch in the north took up arms along with his huge army of elephants against Pulakesi in an effort to occupy the southern country below the river Narmada, but was unsuccessful. From copper plate grants, it is found that Pulakesi kept a mighty and strong force on the banks of Narmada to guard the frontiers. It is said that the kings of Kosala and Kalinga feared him. His large army also marched against the Pallava king of Kanchipuram (or Conjeveram) and laid siege. Crossing the Kaveri river he invaded the kingdoms of the Cholas, the Pandyas and the Keralas. Having established his supremacy, there was peace in his empire. Inscriptions indicate that this career of conquest ended in AD 643.

The Kalinga kingdom under the Eastern Gangas (Orissa) held sway from around AD 900−1200. They followed the law of primogeniture – the eldest son by the chief queen succeeding the throne. They kept big armies − several thousand infantry to man the elephant corps. They employed trainers known as *sahani* − *gaja sahani* (elephant trainer), *aswa sahani* (horse trainer) and are said to have been in battles against the kings of the east and the north. Archery was the way of warfare and *kumta* and *khadga* (sword like weapons*)* also came into use by the twelfth century. The invading armies of the Chola king coming in search of the Kalinga king are said to have indulged in untold atrocities, plundering, pillaging and burning townships, even though such acts were not sanctioned in the art of warfare (Rao, 1991). The movement of troops however proceeded on military roads or *rājapatha.*

Huen Tsang, the Chinese Buddhist pilgrim visiting India during this period described the bravery of Pulakesi and his continued independence as a much loved king and benefactor who remained unvanquished and unsubjugated by the repeated attacks of Harshvardhana and his mighty alliances from the east and west. Huen Tsang was much impressed by the warlike habits in this vast kingdom (Maharashtra) covering 1200 miles (6000 li) in circuit. He described the climate as being warm and the people as being tall, haughty, but simple and honest. They were helpful but would bear no insult in silence and readily use their spear to avenge themselves after giving due warning to the enemy. Their battle manners were described thus: 'though the fugitives were pursued they were not slain upon surrender. A general who had lost a battle was made to wear women's clothes in shame and in sacrifice of his own life', a very different sort of punishment indeed. There were hundreds of champions maintained by the state. In preparation of combat, they drank wine to the point of intoxication and became so spirited that they felt they could defy 10,000 men single handedly! They also fed the elephants these intoxicating potions to make them fierce. They could kill a man on the road and not be punished. On the commencement of the campaign, these brave champions marched in the vanguard to the beat of drums. They trampled everything under their feet. They would frequently come to blows under the influence of strong liquor (Bhandarkar, 1895, p. 52).

Pulakesi was succeeded by his second son Vikramaditya I, who has been called the favourite son or *priyatanaya*. Vikramaditya was a brave and able man and was able to curb the rebellion in the kingdoms of Chola, Pandya and Keralas. Vikramaditya II, the great grandson ascended the

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throne in AD 733 and launched himself against Kanchipuram's Pallava king – their hereditary enemy (Bhandarkar, 1895, pp. 56–57). After the defeat of Nandipotavarman who fled from the battlefield, a large amount of war spoils were captured in the form of rubies, elephants and instruments of martial music. He however did not destroy the temple town of Kanchi, but donated a good amount of money to the Brahmanas and restored the temples.

The pivotal point for the citizens in the upper classes of society in ancient India was their king. They all tried to imitate him and his luxurious style of living. In comparison, the life of the poor people was dismal in every respect; dressed in rags, they could only afford to eat rice and paste made of black lentils fried in foul oil. The king neither had time for the sufferings of his people nor did he show any interest in them. Immersed in self gratification of every kind, pursuing amusements – except on special occasions when they might condescend to announce celebrations where all may join – the kings of that period are said to have totally ignored the poor and the peasantry and violated all norms of social behaviour. Many kings come across as having forgotten the ancient code of the kingly Kshatriyas, what it meant to be a king and to take a king's responsibilities towards his subjects seriously. They indulged in excesses of every kind including incest; they were weak and abusive and did pretty much as they pleased in conducting the business of the state (Dhar, 1991). This description of the kingly life in Kashmir could apply to many other parts of the country.

In Kalhāna's *Rājatarangini* (Stein, 1961) one finds the chronicles of the kings of Casmir (Kasmir or Kashmir). In the time of King Uchchala of Kasmir, there was not a single festival that was celebrated in a bloodless manner. The celebrations were violent. The king used every woman available freely, gorged on food and drink and had no time at all for governance. One has to wonder how they were able to raise and maintain armies and fight wars. One may also imagine the fate of the soldiers in the royal army because most of their numbers would have come from the poor stock and they joined the army because they hoped to get paid or at least get rewards after victory. King Harsha (AD 600) was the last of the great emperors of this period.

Islam was established in Delhi and the countries of Hindustan by a pardoned martyr Sultan Sa'yid, the son of Bah-ud-din-Sam around AD 1173 as mentioned in the *Tarikh-i-Mubarak Shahi* by Yahiya Bin Ahmed Bin Abdullah Sirhindi (Beveridge, 1910). In AD 1174, Sultan Muizz-u-din took control of the vicinity of Ghaznin and marched towards Gujarat. The Raja of Gujarat, Rai Bhim Deo's large army of infantry and elephants defeated the Muslims. Again from AD 1179 to AD 1198 fresh attempts were made to conquer the fort. In one such encounter, Pithor Rai with his numerous cavalry, foot and elephants routed the Muslim invaders and pursued the fleeing sultan but failed to capture him; so he marched against the fort of Tabarhindah being defended by Ziauddin Tulaki who had been installed as governor for 13 months. The fort held out for 13 months but due to the dire situation created by the inability of the new recruits and lack of supplies and fodder, negotiations began, truce was sought and then the fort was vacated. The history of Muslim rule in India commenced in the year AD 1260 according to Elliot and Dawson (1877).

The Muslim period in India is painted with scenes of bloody wars, slaughter of the vanquished, looting of wealth from every temple and land, and burning down of every hamlet, farm, and standing and stored crop. From the detailed accounts in Elliot and Dawson (1877) of the chronicles of the Mohammedan period in history, one gets a sense of the determination with which they attacked, the suddenness of it and the chilling depravity of the invaders, of the irreconcilable and petty rivalries and jealousies of the fragmented kingly states, of deceit and connivance against each other to gain favour for the preservation of their own land and fortunes from the conquering Mohammedans.

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And the invaders once having gotten a foothold, spread all over the country and into the Dekkan, creating dynasties. There were Hindu states in the north and south but these different dynasties ruled supreme in their little corners till the arrival of the Mongols and the establishment of the Mughal Empire.

Mughal Invasion and Rule

India was open to the world of nomads in the west only through the Khyber Pass in the Afghan mountains. The inhospitable lands to the north and northwest of India were inhabited by Turks, Turcomans, Khirgiz and Mongols − all pastoral tribes but really the most cruel, violent and pillaging horsemen (Braudel, 1993, p. 164), and the target and victim of their aggression was India. Although trading colonies had been established on the Malabar Coast as early as the eighth century, the spread of Muslims was slow (Braudel, 1993, p. 232). In the early thirteenth and fourteenth centuries and again in the sixteenth to seventeenth centuries, the repeated waves of destruction accompanied by clash of civilisations produced large-scale massacres. Several thousand Mongol cavalry were repelled by the heroic battle with the far fewer but very brave and skilled horsemen of the Indian army. In the *Shah Nama-I-Hind* of Isami (Mahdei Husain, 1898), the author describes that the Mongols who came charging in AD 1200 were so terrified of the Indian army led by Malik Khamush that after barely two days of fighting, their camps were found to be deserted.

Timurlane and Babur

Emir Timur Beg also known as Timurlane of Samarkand (AD 1370−1405) captured Delhi in AD 1398, sacked it thoroughly and withdrew (Babur Nama, p. xviii: Hiro, 2006). Emir Timur was a nomadic Muslim, who conquered 2.15 million square miles of territory but died a violent death. Leafing through the account of Timur's invasions, one learns of long marches through mountain passes, finding winter quarters in fortressed towns to sit the winter out, long sieges of forts, which made both parties go hungry in large numbers. The allowing and ordering the massacre and slaughter of the vanquished and even claiming the wife of a captured enemy were the tactics that characterised Timur Beg's war exploits. However, beautifully laid gardens, camping meadows, growing excellent fruits and greens also goes to Timur's credit. Samarkand was beautified after its fort was captured. He had gone as far as Bhira and further into the interiors. On his return he left several of his territories, from Kabul to Chirab, in the hands of his descendants. The great grandson Sultan Masood Mirza Kabuli and his sons reigned over these regions but eventually lost Kabul and Zabul in the period AD 1452−1466 (Babur, p. 212).

Zahiruddin Muhammed Babur (AD 1483−1530) is known as the founder of the Mughal Empire, and is said to have descended from the dual lineages of Timur and Chengiz Khan (AD 1162−1227). Babur's claim to having founded the Mughal lineage comes from his own parentage. His mother was a half Chaghatai and half Mughal and therefore Babur considered himself to be half Timuri-Turk (on his father's side) and half Chaghatai (his mother) (Babur, p. 350). Babur led an eventful existence from very early on (Babur, p. xviii). At the Battle of Panipat in 1526, his army was very small but he possessed parbque bases and field guns whose carriage wheels were secured with chains to resist possible mounted charges while on the battlefield (Braudel, 1993, p. 233). Babur, whose victory was considered a victory for Islam, expanded his army with mercenaries from Kashmir, Iran, and other Islamic countries and also from the west.

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Babur's own memoirs, *Babur Nama*, provides details of his several expeditions and campaigns. In it, he describes a Mughal custom laid down by Chengiz Khan which he followed in the matter of battle order (Babur, p. 87). Each clan had its place and position which its ancestors had always occupied. The most reliable men (equivalent to the ancient Indian Moula army) went to the extreme points of the right and the left, Chiras and Begchik clans always took the point on the right. Disputes to claim this honour were settled with swords. One would take the highest place in the battle array and the other in the hunting circle. Then they all went hunting and afterwards merry-making. He describes Mughal fashion of dress and bearing (Babur, p. 91) − Mughal caps, long coats of Chinese satin embroidered with chain stitch, Mughal quivers and saddles of shagreen leather, Mughal horses decked out in a unique style. When a sultan paid a visit to another, or a son visited his father, he took a small number of men, 1,000 to 2,000. Very stylised manoeuvres on horses were carried out before dismounting and paying respects to the waiting sultan.

On Kabul, he waxes eloquent, praising it in every way. The trade between the neighbouring countries and Kabul in the period AD 1504−1520 was lush with goods coming in from Khurasan, Kabul and Kandhar. There were two trade markets coming via the land route between Hindustan and Casavang from Kashgar, Fergan, Turkistan, Samarkand, Bukhara, Balk, Hissar and Badakshan. It was certainly more profitable to conduct trade right there than to go looking for goods in China or Turkey. Thousands of horses, 8,000−10,000 at least, were brought in every year. 15,000 to 20,000 loads of household goods, white cloth, sugar candy, refined and common sugars and aromatic roots came from Hindustan. The slave trade was rampant too. Hefty profits rolled in by all these methods. Kabul's climate was so conducive to growing a wide variety of fruit and tree nuts, even lotus flowers, tulips and sugarcane that all these were planted in the specially laid gardens (Babur, pp. 125−126). Rice and corn also grew in abundance (Babur, p. 129).

It was a rich land by all accounts. From crops, land toll and from the travelling nomads (traders perhaps), 8 lakhs (800,000) of *shahrukhis** used to be collected, annually perhaps or at other specified times (Babur, p. 135; *2 *shahrukhis* = one Indian rupee). All this was on irresistible lure for the Turks, Afghans and Mughals.

Babur's second expedition from Kabul to Hindustan followed soon after he took the Bajauri fort in a campaign against Haider Ali Bajauri, which was on his route. Bajaur's army in the fort was made up of footmen equipped with bows and arrows, stones and swords and very likely lances as well, but they were no match for Babur's army of horsemen and swordsmen equipped with mantlets, ladders, axes and other objects to climb over the fort walls, to break them and capture it, and matchlock guns as well (Babur, pp. 205−206). Babur's attack was so successful that the fort was captured, in his own words, 'in two or three astronomical hours'. The Bajauris were non-Muslims inimical to Islam and were therefore massacred, their wives and children captured. Of more than 3,000 men killed in that battle, there were many who were beheaded. It was a common practice to behead those soldiers who were unfortunate enough to be surrounded and caught (Babur, p. xxxii). Babur himself, as those who preceded him, committed massacres and slaughters − his diary records the killing of his enemy in battle and capturing the wife as booty. Babur and his troops, at the end of the day, returned to their own camp and he bestowed the territory to Khwaja Kalan along with a large force of warriors.

With battle matters settled to Babur's satisfaction, it was time for merriment, entertainment and sport, with wine, intoxicating confections, fruit and equipped with hunting eagles they went after black deer (Babur, pp. 207−208). Replenishment of their supplies during the march from Kharaj

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valley on their way to Bhira came in the form of raids carried out even during a snowfall in the mouth of the valley. The local Afghans deserted their homes when they saw the troops. There was plenty of corn in their homes, which were halfway up the valley, all of which were captured for the men and their horses.

Kabul was his base but Babur set his mind to raid Hindustan (Babur, p. 209); the soldiers hoped for some really valuable plunder – for this purpose, they had to be better organised. The horses which had already travelled as far as Bhira were hardly capable of going any further. This army that was proceeding to strike against Hindustan had to go past the Indus river and dense forests. Here they found wild game rhinoceros. The army composed of horses and baggage camels crossed the waters while the camp bazaar and foot soldiers made it across on rafts. But events turned against him even after he negotiated with the Bhira head man, for a price of 400,000 *shahrukhis* (Indian rupees 200,000, or US$ 100,000), for peace and dominion (Babur, p. 213). Treachery and untimely malaria together conspired to make Babur abandon his march to Hindustan once again (Babur, p. 221).

In his fifth expedition to Hindustan, the Battle of Panipat was fought in 1526. From Lahore came 20,000 *shahrukhis* in gold sovereigns and silver *tankas* (Babur, p. 245) brought over by Nour Beg when Babur's party reached, Baran River. His purpose to march eastwards was to tackle Ibrahim Lodi who sat on the throne of Delhi. Lodi's army was 100,000 strong, buttressed by 1,000 elephants. Babur was on his way from Ambala, bestowing gifts of towns, keeping close watch on Lodi's movements, sending smaller detachments to meet head-on Lodi's own military collector. At close encounters, first a group of 100–150 warrior scouts engaged with the enemy and then when the huge army of Humayun appeared, the enemy could not escape and was surrounded. Some 100 men were beheaded and the rest of them were taken prisoner along with seven or eight elephants (Babur, pp. 256–257).

Battle Preparation – Panipat

Babur began his battle preparations much in advance. His force did not seem to have been larger than 12,000 in number. In the camp, every man was ordered to collect carts whichever way he could. They gathered 700 carts including the baggage carts of the army. These carts were to be joined in 'Ottoman' fashion with ropes made of rawhide. Between every two carts, five or six mantlets were fixed. The matchlocks were to be fixed from behind these and all work was to be completed in five to six days. Battle plans were made and on a consensus it was decided to keep the crowded town of Panipat on one side and carts and mantlets ahead of the infantry and matchlock men on the other. They marched forward camping only one night on the way to assuage the anxieties and restlessness of the soldiers on a strange land who had been on the move for a long time.

It has been said that the astrologers had foretold Lodi's defeat and added to that his army suffered from low morale. In the fierce battle that ensued, his 100,000 strong force (at least that much if not double, which he could have collected as levy from his lands) was no match for the 5,000–6,000 contingent of Babur that was thrown in under the leadership of various Begs in preliminary encounters. In the main battle which engaged from dawn to past noon, which Babur describes in detail, men, elephant riders, archers, cavalry, field cannon shots were all involved in manoeuvres in which Lodi's men were encircled. Babur offers praises to God saying that due to his mercy and kindness, the battle was made easy and won in half a day (Babur, p. 262). On first count, 5,000 to 6,000 men were found lying dead close to where Lodi had been.

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The conquerors estimated that 15,000 to 16,000 men may have been killed all over the field, but found later on from statements given by Hindustanis in Agra that perhaps 40,000 to 50,000 died in that battle. A detachment sent to capture Lodi who fled towards Agra instead found his body on a heap of the dead. True to their custom, he was beheaded and the head presented to Babur (Babur, p. 263). Babur then saw to it that Ibrahim Lodi's body was bathed and prepared for burial and a tombstone ordered to be erected.

The Mughal Empire was born, and as Braudel (p. 233) says, founded its luxury on India's general poverty in the midst of fabulous riches and a series of famines. The whole of Muslim Rule in India from the beginning was characterised by terror, cruelty, heavy taxation despite failed harvests juxtaposed with the opulence and splendour of the land. The Kohinoor diamond came into their hands after Lodi's defeat, offered by the Rajah of Gwalior to Humayun who then gave it to Babur upon his arrival in Agra.

The Beginning of Mughal Times

Babur, much as he was enthusiastic about entering Hindustan after defeating Ibrahim Lodi, found little to recommend the place. He was a keen observer and recorded all that he did and saw on a daily basis. His notings on the life and customs in Hindustan are quite acerbic and pungent, pointing out numerous defects and its unpalatable customs, its people, its weather, and almost everything except its riches and the industry of the people. He records (Babur, p. 275) that the 'country had few charms'. However, he also recorded the way Indians categorised their seasons and months, aligned with the 12 zodiac signs; the names by which each week day was known then are the same as the names in the Hindi language now in use. He noted how time was divided and how to tell the time of day, the various weights and measures for trade and currency purposes (see Annexure 3, Table A 3.7) and the very important matter of how numbers were counted at that time which are much the same as now.

Babur's son and heir, Nasiruddin Mohammed Humayun was even more of an art and literature lover than was Babur. He loved the floating palaces with bazaars and gardens as well as the music although he was not particularly different in his military approaches. His idiosyncrasies (stars ruled his life and actions) and frivolities were also many. Categorisation and systematisation was a mania with him. Humayun is credited with the innovation of devising the prefabricated portable bridge. He organised and streamlined his administration, his courtiers and the government departments which were classified into four categories based on the four elements, each under a minister who had to wear clothes suited to his department. For all these administrative initiatives, his army lacked training and discipline, it lacked good leaders and was at best a rabble that gathered under his standard and was defeated time and again by Shershah. In 1540, when Humayun met Shershah outside Agra, his army appeared to be mighty impressive with firepower of 700 swivel guns, 21 heavy cannons, and a battalion of about 5,000 musketeers (Eraly, pp. 46–48). Humayun was himself not said to have been a great leader, and since his amirs (those who had not perished in Bengal in the battle with Shershah) had 'no prudence or knowledge', he could not whip this big force into an able fighting one. There was disinterest in the camp, among the officers and the troops who were all disorganised. Waiting on the banks of the Ganga, his army became restive and demoralised which led to mass desertions. Shershah's intense desire to drive the Mughals out of Hindustan and wipe their rule out of existence was realised, and Humayun, leading an army of 40,000 (even after it was thinned down) was routed in Kannauj and fled to Kabul, the home and retreat of the Mughals, but from here too he had to move to Persia.

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Shershah of the Delhi Sultanate, a hard working Sunni, comes across as a somewhat accommodating but very pious potentate for many Hindu officers were in his service; the infantry was predominantly so, as were his musketeers. He was charitable to the extent that several thousand horsemen and private followers were fed out of his kitchens. Humayun could make a come back only 15 years later and then only after Shershah's death. In the interim, Humayun retreated to Persia and lived there as a fugitive from India and Kabul.

The royal entertainments in Persia, till his return in AD 1554 included a lavish style of living at the expense of the Shah, who entertained him with courtly hospitality and pomp and ceremony (Eraly, 2000, p. 105). Each day, in his honour, no less than 500 dishes of different foods were presented and the Shah specified that no less than a total of 1,500 items (foods, beverages, desserts combined) be prepared everyday and served on *langari* dishes known as Muhammad Khani.

Even though Persia was rich with food, jewels and wealth, one must wonder how the fugitive Humayun's welcome stay could have been supported in such a lavish style. But Humayun, treated like a royal, fell readily into the lap of pomp and revelry and adopted the style of Persia. This must have left a lasting impression on the Mughal for when he returned to Agra, his style of living and functioning was definitely different. His knowledge of and interest in various subjects contributed to the development of arts, architecture, music and poetry.

Akbar, his son who succeeded him, was raised under these cultural pursuits and though his acquisition of book knowledge was severely limited, he had an instinctive feeling for good things, a kind approach and the right ways.

We know little of the Mohammedan 'art of war' and how it was conducted beyond the evidence of their pillaging and destruction and later of their single-minded pursuit of conversions to Islam, which left its lasting imprints on the conquered land by a succession of Muslim rulers. Babur was no different, nor was Humayun.

We have some insight into this aspect in Emperor Akbar's time from consulting the chronicles of Akbar's rule known as *Ain-I-Akbari* (Sallami, 1939). Akbar had appointed a *Sipah salar* or commander of the forces (a sort of provincial viceroy to His Majesty) and a *Faujdar* − the commander of the forces for each province (Ain: 1, 2). *Sipahi* is the Hindustani name for soldier − a term which became better known as *Sepoy* in the British Colonial rule and *fauj* stands for the army.

The duties of the *Faujdar* included constant inspection of the force's accoutrements and suppression of any rebellion. He planned for the troops, provided horses where necessary at the expense of the state and furnished a tour of the troops particularly because there were 12 *subahs* (areas or districts) spread far and wide. His responsibilities also extended to supervising the pitching of camps in the neighbourhood of a body of rebels and inflicting loss upon persons. There was a clear direction not to use the cavalry, should the infantry suffice. There were definitive instructions given and ethics involved in dealing with the enemy, which can be gauged from the warning that the camping place should be well beyond bowshot and for the army not to be rash in attacking a fort. Gathering spoils and loot in war has been a way of warrior life since Alexander's time and it was no different now, but Akbar being fair and just, wished that equity be scrupulously observed in the distribution of spoils. Fighting in the name of the Emperor, one-fifth of the war loot must also be reserved for the royal exchequer (Ain: 1, 2).

There is no specific mention of any type of care or rations or food entitlements for the soldiers. This is not surprising and in fact is to be expected. In matters of food, the soldiers ate what their

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culture and tradition dictated. One may also remember that the vast majority of the soldiers – the *sipahis* coming from the various provinces or *subahs* were the responsibility of the *Subahdar*. They belonged to the villages of the chiefs, and were perhaps looked after by the latter. Even otherwise, they belonged in the villages and ate what they normally ate in their communities – not lavishly but simply and wholesomely.

Food service in the Imperial Mughal kitchens: The food for the nobles, chiefs and commanders who belonged to the higher classes and the aristocracy as well as the soldiers in the emperor's entourage came out of the Imperial kitchens.

The Imperial kitchens in Mughal times were of a class by themselves. Not forgetting the early exposure of Humayun to Persian elegances and his enjoyment and penchant for lavishness and pomp, a very elaborate protocol for food preparation and service was designed and operated whether it was in the palace or in the encampments. Firstly, there was no fixed time for a meal but the servants always had to have things ready so that within one hour after the order was received for food to be served, the Imperial kitchen served up more than 100 dishes (Ain: 23). Cooks recruited from all countries prepared a great variety of foods with grains, greens, meats, oily sweets and spicy dishes, under the supervision and control of a sincere, loyal and trustworthy man appointed as *Mir Bakamal* or master of the kitchens. He was assisted by numerous upright and sincere persons i.e. the *Bakamals*. Special provisions came from all over the land. There were numerous ingredients and staples which went into the preparation but a note from Mir Bakamal and Diwan-i-buyulat (Superintendent of stores) was necessary to lift any stores needed for food preparation. There were such items as *Sukhdas* rice from Bharaj (Bahraich), *Dewzira* rice from Gwalior, *Jinjin* rice from Rajori and *Namlah* and *Ghi* from Hisar and Firuza, as well as ducks, waterfowls and some vegetables from Kashmir.

The sheep, goats, fowls, ducks etc. were fattened by cooks; fowls never kept for less than a month. The king and his force commanders dined on the same grandiose scale with a spread of food and service comprising various kinds of breads, sauces, curds, plates of pickles, fresh ginger, limes, and various greens. Foods were prepared and dished out under Mir Bakamal's seal of inspection and approval and under his hygiene and safety control. It was mandatory for the cook and Bakamal as well as the palace servants to taste the food at different stages of preparation. Babur in his memoirs (Babur, p. 286) records an attempt to poison him. During one lunch, meat, fried carrots, bread, dried hare meat and buttered fritters were served to him. The bread he had eaten had been sprinkled with poison powder. Babur fell violently sick but survived. His antidote was milk in which stamped clay was dissolved which had a laxative effect. After this episode, it was made mandatory for the food to be tasted by the cook, the subordinate cook and the head taster before serving to the monarch.

There is an interesting reference to the practice of keeping some victuals in 'half ready' state should they be needed in short order. Copper vessels, coated with tin (tinning), were the preferred choice of cooking vessels and food was served in gold, silver, stone and earthenware and ceramic plates and pots and cups. A fanciful range of flavoursome recipes are mentioned like *zard birinj* (spicy rice with meat and nuts – sweet or savory), *Qubuli* (rice with meat, *Ghi* and condiments), *biriyani* (using a whole Dashmad sheep) which used to be made in the Mughal kitchens (Ain: 24) and which are still popular today. The use of spices and condiments in a special way and the particular way foods were prepared have earned the cuisine the name *Mughalai* style.

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Mindful of the messiness involved in animal slaughter, butchering was carried out in specially constructed slaughter houses which were far away from the royal kitchens. This ensured cleaner surroundings.

More than any rations that might have fallen to the soldiers share and although some amount of food might have been given out of the imperial kitchens to the officers and servants attached to the stables, it is the specific food allocations for horses, camels, cows and mules, (Ain: 53−70) which are very interesting; these rations were quite precise, much the same way as mentioned in the *ArthaŚāstra*.

The royal exchequer directly bore the expenses of all this luxury but the expenditure on the daily maintenance of troops amounted to a fixed salary and was the responsibility of the different *subahs* to which they belonged.

Akbar's court was huge and his army housed anywhere between 50,000 to 200,000 men in Delhi alone, composed of cavalry, musketeers, gunners, light field guns (stirrup artillery) and heavy cannon, reserves of horses and elephants, soldiers, grooms and servants. Their leaders received pensions and profits (Braudel, 1993, p. 234) which allowed them to live in a lavish style. Each leader resplendently riding an elephant or sedan chair or palanquin or dressed and decked out in splendour was a sight to behold − with 100 servants in tow (in the field these were non Muslims, of a darker skin) carrying various articles like toothpicks, spittoons and drinking water. The Delhi contingent had Rajputs led by their own Rajahs, who raised their own native armies against neighbouring Persians or Pathans or Muslims from Bengal or against Hindu or Muslim princes of the hostile Deccan.

A constant thorn in the side was Shivaji − the great Hindu Maratha warrior. He was fully versed in war preparedness. Shivaji devoted much effort to fortify his estate and each fort was kept in a most efficient and performing manner under a garrison of faithful soldiers. This involved a vast expenditure and additionally a large supply of stores, equipment, ammunition and food to be maintained for emergencies. He needed funds to make payments to his army and to obtain war materials. He was rapidly spending the revenues collected from estates. He was the master of southern Konkan but he ambushed as easily to capture money and baggage trains proceeding towards Bijapur (Puri, 1980 p. 79).

Aurangazeb, who sent his armies against Shivaji, experienced the kind of warfare which the Marathas carried on for a long time to come. Shivaji was daring and had no compunction to order his followers to attack and plunder the baggage of Amir-ul-Umara's army wherever they met up. Upon learning this, a cavalry force of 4,000 horses with experienced officers was detailed to march and protect the baggage (Pringle, 1904, p. 425). Typical ambushing tactics were adopted by Shivaji's daredevil *Dakhinis* who appeared suddenly pouncing on the train and made off with horses, camels, men and whatever else they could carry away, and having achieved what they wanted, vanished as quietly when they saw approaching troops. And it would not be wrong to say that the plundering soldiers provided for themselves all the food and any other supplies required and that there was no other special mechanism of food distribution while engaged in such guerilla war.

Between Aurangzeb's death in 1707 and the Battle of Plassey in 1757, when the East India Company took over, was a period during which the once great Mughal Empire was declining. Delhi was seized by Afghans and the Deccan kingdoms were once again left to their own devices. Long before the British, Portuguese trading dominated Calicut and then Goa. There was also a French and Dutch presence in the southern parts in the way of factories. The British nonetheless began,

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in the name of expanding trade, insidiously to build force strength and occupy portions of land in the provinces of Bengal and Madras. Jafre (1998) gives us an insight into this transformation from Mughal to colonial rule.

The British Empire spread gradually in stages and was complete by 1849 when it conquered the Punjab (Bruadel, 1993, pp. 236–237). There were several native autonomous states, each independent, (real or virtual) which pursued their own skirmishes and wars. In the south, there were pliable rulers as allies or collaborators but also there were some fiercely independent minded ones whose defeat at the hands of the British brought the almost complete subjugation of India.

Hyder Ali and Tipu Sultan

One notable phase in India's warrior tradition came with the reign of Hyder Ali and Tipu Sultan of Seringapatam (now called Srirangapatnam), who waged wars against British domination on one side and against the Marathas on the other while repulsing both Nizam's and Maratha troops from their territories. Hyder Ali knew when to strike a blow against the British. In 1769, he launched his first war against the British in a raid with 6,000 horses on Madras and dictated peace terms to the Governor (Kirmani, 1958, p. 144). One must try and imagine the march with such a large cavalry on primitive roads and through thick woods and forests. There are no specifics on how the troops fared during their march and intermittent encampment. Hyder was defeated in his last war in 1781 and killed. Tipu, his son, made peace with the British but was in a continuous state of battle with the Nizam, the Marathas and the Coorgis in turn. When he struck Travancore, which was an English ally, though successful initially he came up against the British who struck against his own territories. Bangalore fell in March 1791 and Seringapatam Fort itself was threatened by February 1792. One major shortcoming in those times was the situation of supplies and sickness among the troops. In war, powerful allies are a great help in providing support, supplies and other necessities. Tipu did not seem to have entertained any such closeness. Commenting on those times, Michaud tells us that Tipu was a staunch Muslim who hated all infidels alike (both Christians and Hindus), listened to none, lacked judgment and kept his own counsel and thus precipitated the alienation of the Nizam's and Peshwa's troops, who might have all come together against the British (Menon, 1985).

Tipu scholars in India differ with this view of Michaud. Certainly, Professor Sheik Ali's (a renowned Tipu scholar) assessment of Tipu's reign does not support such a view (Sheik Ali, 1982). Others have gathered evidence to support the view that Tipu was tolerant, showed great respect to Hindu seers and temples and paid heed to the advice of his counsellors among who were Poornaiah, his Chief Minister and a Hindu. Scholarly papers read at a recently held national seminar highlighted Tipu's tolerant view of the Hindus and provided a rationale for his confiscating vast tracts of land and temple revenues that belonged to the Brahmins (Tipu Seminar, 2006). According to Prof. K.K.N Kurup of the University of Calicut, another renowned scholar, Tipu was not only a good administrator but believed in equitable distribution of land and wealth among his subjects, both in Carnatic and Kerala regions. He paid special homage to the Sringeri Śankarāchārya and returned the temple lands belonging to the religious establishment after a court ruling. Tipu is believed to have brought about reforms in finance, military and civil administration and organisation in the state, and in fact was the first ruler in the South to separate civil and military administration, even as his contemporaries were steeped in medieval beliefs. According to Joseph Sebastian, Professor of History at the University of Mysore, Tipu developed an alternate model for feudalism that was

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rooted in eighteenth century Asia. Ali (1982) states that since Tipu knew that the British had come to India for trade he made efforts to improve trade with other countries, particularly France and Turkey. What might have happened if Napoleon had come to India? We might have fallen under French rule instead of the British for the flag always followed trade.

Tipu is considered by the experts to have been a seasoned soldier who understood the utility of artillery, sophisticated guns and missiles for the destruction of fortresses. Nevertheless he kept a large number of high bred horses in his army. He is said to have instituted a proper recruitment of soldiers by the state and paid the soldiers promptly. His astuteness also extended to issuing special regulations to organise a navy for which he chose Bangalore as the Headquarters. He believed that a navy was absolutely necessary to resist the colonial powers and thwart their insidious expansionist intentions. None of the historians however discussed Tipu's military organisation or supply logistics. These were considered micro-details and hence outside their area of interest, which was economy and modernisation of the state under Tipu.

Mysore Troops and Warcraft

While the modern Indian scholars are silent about Tipu Sultan's manner of carrying out wars, Michaud was more forthcoming, very explicit and commented at length on it from a generalisation on how Indians made war to the fall of Tipu's empire in Mysore (Menon, 1985). It was a time when, after two centuries of progress in Europe, some of the newer concepts got injected into Hyder Ali's thinking. Europe's great success lay in the realm of new war craft, which was very much advanced as compared to the practices in India. Hyder Ali, helped by the French Governor, had formed his armies after the European style thus making him a formidable match for the English. Mysore troops, like other native troops elsewhere in the country, were essentially composed of irregulars who had no skills training. Also, their principal task was to act as escorts to convoys, block the transport of the enemy and attack essentially when the enemy was in flight.

They were ill-clothed, ill-equipped and carried a sword and a very long country made musket, difficult to load and fired with a match. Their skills lay in firing balls for a machine called matchlock (the same which more than two centuries ago won Babur the battle of Panipat), and using bows and arrows and spears and discharging rockets at the enemy cavalry while the latter was passing a defile. Rocket scientists in India acknowledge that Tipu was the first ever to have conceived of a rocket-like missile and had some built which he used against the British forces (the only known existing sample piece is on display in a London Museum). In this respect, Tipu was far ahead of the British or the French in his war technology and craft, however archaic and anachronistic the rest of his army and war machinery.

The regular infantry soldiers, though small in numbers, were well cared for, well trained, well paid and disciplined but in actual battle engagements much confusion reigned. They used a European design musket (with bayonet) which in fact had been passed on by the English themselves as their army arsenal discards. The English surmised that this weapon could not be dangerous in the hands of these troops since they only used defensive tactics, stood too far and never used the bayonet. The way these native armies waged war was more like guerilla attacks. Tipu's army also had bullock cart drawn artillery obtained from French foundries and gunpowder from Indian manufacturers.

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Pay and Camp Food

Each soldier was well paid and a horseman even better, up to Rs. 200/- per annum. The horsemen always had a servant man to care for the horse, cut grass and fodder for the animal. The soldiers' own supplies and household articles were carried on a bullock. In essence, the soldier's family and household followed him and helped pitch camp and cook and care for him. The tent was a piece of cloth and even palm-leaf sun shelters were put up quickly. If there is no one specific account that can be found referring to supplies and provisioning during marches and in wars fought in the various Indian states in our history, it would be because for the kings and commanders everything was arranged as befitted their position and status by the large retinue of personal attendants and servants that accompanied them. For the soldiers and the rest of the contingents, there were large bazaars accompanying the armies that acted as supply chain for food and other necessities. These bazaars were set up in the entrenched encampments in designated locations by civilian traders who stocked every conceivable article required by the soldiers, commanders and non-combatants. The contractors supplied food and forage and the soldiers purchased their own food. For the king's pleasure and personal service, there were the *Peshkhanas* (advance tents in preparation of the journey) in the style of the Mughals (Eraly, 2000, p. 112) whether during an expedition or while just shifting residence. This manner of travel was an ancient practice observed by the native rajahs and maharajas and all the Muslim dynasties and Mughal kings that ruled India. When war expeditions marched out, the armies were attached to this civilian umbilical cord of supply and could not stray too far out or away while they were on the move.

In keeping with the tradition, Tipu's armies were accompanied by large contingents of non-combatants and it is said that while his *zenana* (palace ladies) was huge, in Hyder Ali's tents one did not see any women. Descriptions of such entourages indicate that each soldier was accompanied by his family (both immediate and extended) and his belongings, his animals and his cart or tumbrel. Probably the entire village emptied itself out if sufficient number of soldiers belonged to that village. People living inside the forts may have felt more secure to leave their families and belongings behind. In either case, for replenishment of the supplies, food or forage, the countryside was ransacked.

Tipu is known to have kept many fortified towns in his territory well stocked with essential goods – arms, weapons, animals, feed, forage, grain and other articles to be accessed during his marches. But before marching, it was customary to take a good strong dose of opium mixed with food in the form of a preparation known as *bhang*, which gave them a sense of courage and made them impetuous and ferocious. That the armies took copious amounts of such substances to bolster their courage before battle is learnt from the descriptions of battle preparedness during the Kurukshetra war and the battle of Tunga.

In the time of the invasion of Mysore in 1799, the British had gathered a force strength of 40,000 combatants and true to the native tradition, four or five times this number of non-combatants. Wellington had the singular job of getting adequate number of pack animals to organise his baggage trains. There were moving columns of the army marching from Bangalore containing numerous soldiers, their followers in the 'follow train', thousands of animals and huge quantities of supplies to last them for the anticipated period of march and battle. It was a four-sided formation 3 miles wide and 7 miles long, hollow in the centre filled with the commissariat's transport animals and masses of supplies. It was imperative that supplies be taken along because the countryside had been stripped bare.

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If Tipu's *zenana* was huge, the senior British officers travelled no less grandiosely. The officers had humble quarters, but the generals had more lofty tents and their entourage was characterised by the accompaniment of numerous followers of all sorts and a number of women, reminiscent of Napoleon's winter campaign in Russia which witnessed a huge encumbrance due to the army's followers and which immeasurably slowed down both his progress and retreat. That Indian troops followed some very archaic methods is seen from the resemblance between their fortresses and those of Greek and Roman fortifications. Tipu's warcraft too relied on some ancient customs such as the classic battle array, where the leader or the king was mounted on the elephant flying the banner and rode in the centre of a formation. A great value was placed on the cavalry while the footmen were used only as front line fodder. History shows us that the infantry was always advantageous in conquering the enemy as it was able to disperse and scatter quickly.

With Tipu's fall in 1799 came the British occupation of Mysore.

Battle of Tunga, 1787 – The Day of Battle

The battle of Tunga between the Rajput confederacy and the Marathas serves as an example of the massing of armies and the pre-battle preparations (Saksena, 2002, pp. 370–374). The Rajput confederacy's strength has been estimated as 54,000 where different Rajas pitched in with their own troops as was the custom, and the combined strength of this force being 40,000 (or 30,000 troops according to some records), while the others in the confederacy contributed some 20,000.

The Marathas gathered a 46,000 strong army from disparate sources – Sikh mercenaries, Baji Rao's two battalions of de Boigne, Naga monks, Rajdhar Gujar, Madhaji and Rane Khan.

Customarily the battles were fought from sunrise to sunset hence battle preparations began early – three hours before sunrise. A *naguarra* (drum) was beaten as a wake-up call to get ready; it announced to the encamped troops that battle would ensue in the morning. *Choubdars* moved from camp to camp telling the troops to 'get ready' for war which meant completing morning ablutions, bathing and strapping on the battle gear. Those whose responsibility was to cook had already begun their work. Men moved with huge quantities of meals and distributed them. At the same time, gunpowder was also distributed.

Meals were consumed quickly. The commander or the ruler ate only when he was informed that all the men had eaten. It has been mentioned here that opium was being used; whether it was consumed along with the meal or was carried on the person is not known. It is likely that the narcotic served to give a certain amount of courage (however false it might be) if taken before battle, and if taken upon being injured, it decreased the pain of injures received in the battle. It was customary to pray before battle, the commander of the forces worshipped and invoked divine graces for victory and success. The *naguarra* was sounded a third time, which signalled the cavalry to mount their horses, and off they went into the battle deployed as per the predetermined battle array – usually a hollow square.

The East India Company

It was Vasco da Gama who first landed on the Indian coast of Calicut in 1498, just four years after Columbus discovered America and two years before the Portuguese discovered Brazil. Babur's Mughal Empire in Delhi was on its way to establishing a glorious future for itself from the 1520s though Babur himself had a very brief rule from 1526 to 1530.

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The Portuguese had taken San Thome. St. Francis Xavier's ascendancy at Goa and Sir Francis Drake's voyage round the world in 1577 were heralding events. Akbar, by then, had come to ascend the Mughal throne and was to become the greatest Mughal Emperor ever. The Portuguese, Dutch, English, and French all sought and demanded trading rights with India. While the Portuguese came early in Babur's time, it was the lucrative Dutch spice trade in the East Indies which the English wanted a slice of and could not get. Indian spices were the next best (Woodward, 1978, p. 25), therefore the English looked towards India. Competition with the Portuguese and the French was their original and primary objective. They captured a Portuguese ship containing cargo from India in 1592. It was full of articles of every description, from gems, jewels, silks, calicos, carpets, quilts, dyes, porcelain vessels, to rare objects like ivory and even coconuts. Their value was estimated to be more than £1,50,000. This was the incentive for them to start trade in the East which led to the formation of a trading company. So in AD 1600, the East India Company was founded in London, to establish trade with India and if possible to capture a good bit of the spice commerce. They wanted a Royal Charter to trade and in return promised large rewards (Woodward, 1978, p. 19). Queen Elizabeth I gave them the charter. The Company of merchants of London who traded in the East Indies became the Honourable East India Company.

The beginning of one of the greatest mercantile enterprises ever founded began with trade in the port areas of Bombay, Madras and Calcutta. Its business presence expanded rapidly, moved inland and became very influential. These areas later became known as the Presidencies of Bombay, Madras and Bengal. Their trading stations were known as factories (Gaylor, 1992, p. 1).

From the early days of settlement the Company employed sepoys to guard and protect their properties. These early soldiers were nowhere like the well-drilled sepoys of the East India Company of later times. They were ragged, ill disciplined bandit like lot. The two people who are given credit for transforming this ragged bunch into an efficient infantry are Robert Clive and his Commander-in-Chief General Stringer Lawrence, the latter is also called the father of the Indian Army (Woodward, 1978, p. 119).

Not long after that, the Company established itself in 1619 in Surat, Masulipatnam, and Armagon successively. The Madras history begins when the first Fort St. George was built in Madras by Francis Day in 1640. He was convinced that a sandy strip near the sea was an ideal place for a settlement. And there began the tussle between the British and Mir Jumla for the Fort. The French captured San Thome but had to yield to the British but then attacked Madras and regained the territory. The Mughal Empire fell after the death of Aurangzeb around 1707. New currency called the New Star Pagoda was minted.

Robert Clive did not appear on the Indian scene until 1743. He was a clerk, not a solider but managed to get a commission and joined the fight to take Madras back from the French in the campaign at Trichinopoly in 1746 (Reid, 1999, pp. 69–77). Clive's career rose steadily; he prospered and acquired status and then a position as the Lt. Governor of Cuddalore before the age of 30.

In 1756, Madras was confronted with the news that Nawab Siraj-Ud-Daulah had captured the Company's settlements at Calcutta and that some 146 Europeans had been taken prisoner and were confined in a small space for one night. During this operation, 123 of them had died − an incident that came to be known as the Black Hole of Calcutta (Reid, 1999, p. 26). The situation called for reinforcements, not found in Bengal and not adequately obtainable from Bombay. Therefore, Clive was dispatched in command of the land forces while Admiral Watson sailed in command of his naval fleet. The land forces of Clive were composed of 600 men of the 39th Foot, 300 of the Company's European Regiment and 1,500 Madras sepoys. In a very brief time, Calcutta was retaken.

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The Battle of Plassey and After

Eighteenth century India or Hindustan, as it was known under the East India Company, was a veritable land that promised huge revenues as land taxes from Bengal to the Carnatic, and from Punjab to Assam and was the battling ground for the British and the French in the South. Both had armies made up of Indian soldiers beginning to be drilled and trained and armed in the European fashion. Both Robert Clive and the French Commander Duplex had become quite knowledgeable about the Indian way of warfare and believed that only a handful of imported ruffian white troops would be sufficient to cause terror and instill psychological fear into the Indian soldiers by wielding the European flintlock muskets. In Bengal, the Company was establishing its presence by building forts, abusing local traders and nawabs and cornering their revenues. Bengal, that rich land where the flailing Mughal Nawab Siraj Ud-Daula reigned became a battle ground for Clive to quell any second thoughts that Siraj might be harbouring against the East India Company. The early history of India during the British reign has been the subject of scholarly works by several recent authors like Edwards (1963), Lawrence (1994), Metcalf and Metcalf (2002) and Wolpert (1993).

Commercial privileges enjoyed by groups and companies almost always seem to turn into political ambitions if only to retain a hold on commercial interests. It was no different in Bengal. The East India Company took every possible advantage and brazenly began to show its true colours. When the Nawab who was the natural inheritor of the state and who until now had cordial relations with the British felt obligated to declare war, seeing the obvious spread of the British presence, he was swiftly defeated and Calcutta was seized (Lawrence, 1994, p. 127). The English Company needed its revenues no less than the restoration of its prestige. The revenues would support the war effort in the Carnatic against the French. It was Bengal, says Lawrence that was the main source and strength of the Company.

The beginning of the strangle hold of the East India Company on India may be ascribed to the Battle of Plassey.

Plassey, India's nemesis and Clive's trained military muscle and success were the proof, if one sought it, that the East India Company was to be a force to reckon with. Siraj was not easily cowed down by his defeat at Clive's hands, so he re-grouped his army yet again. In the historic battle that ensued, Clive's army was small in numbers, 3,000 men by this time − 1,000 European troops, 2,000 sepoys and 8 small caliber cannon and howitzers compared to the typically loose and ponderous huge Indian Army of 40,000 infantry, 18,000 cavalry and 50 heavy guns mustered by Siraj Ud-Daula, along with a large train of massive bullock drawn cannons. Clive encamped near the river Bhagirathi, close to the village of Plassey. On June 22 at 6 am, the British army crossed the river and reached a place called the Mango Tope. From daybreak on June 23 until dark, the battle raged. The Nawab's army was apparently no match for the totally reliable and disciplined English troops, the majority of whom were Madrasis. The Nawab's troops, huge in number as they were, had become a demoralised lot, Clive having prepared for five months, shaking their and their generals' morale with subversive tactics. Many of the troops never fought at all. These are stated to be the actual facts of the battle of Plassey (Reid, 1999, pp. 26–28). In the battlefield they fled in fright and were found to be disorganised. All that the European army had to do was to shoot the beasts, the bullocks and the elephants and roar at them (Lawrence, 1994, p. 128). The resulting stampede and chaos and falling commanders caused Siraj's army to flee. Bengal was now in British hands and expansion by coercion became a policy and a pattern of their occupation and

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rule. Much administrative energy was devoted to collecting all the land revenue from the rural peasants. In the late eighteenth century, native men of substance had been empowered to collect taxes from Bengal, Orissa and Bihar. These people came to be leaders only in name. Mir Jafir was installed as the Nawab.

Advantages of being in the Company: For the Englishmen, being in Company pay or being associated with it in other ways was lucrative. Even the lowest employee looked forward to accumulating some sort of wealth from the dealings, gleanings and takings of different kinds.

Military power increased enormously and fortunes were made from war profits, gifts received and from corruption. Clive and several other officers received large gifts from Mir Jafir. Every Company official saw an opportunity to make money. Tax collection officers began to pocket revenues. Fortunes were made from war profits.

Robert Clive, from a class of minor gentry in Shropshire, became a soldier of fortune and not a soldier by training. Clive made 44,000 pounds sterling from 1744 to 1753 as war loot as a junior commander and then received gifts of appreciation from Mir Jafir to the tune of pounds sterling 200,000. Altogether, between 1757 and 1766, he was said to have earned pounds sterling 234,000. Junior officials were ready to sail to get into action − not necessarily for glory but for possible chances of promotion, extra campaign allowances and a chance to grab loot and prize money.

In this way, many officers of the military made tidy sums from campaign allowances and from loot and prize money, enough at any rate to provide annuities for their families at home and still save enough and get a pension to live like the gentry and lead a life of ease upon their return.

Many soldiers grabbed what they could, when they could since procedures for money distribution were not only slow but mostly favoured the senior officers (Lawrence, 1994, p. 130). It seems that after the fall of Bharatpur in 1826 after a long siege, the soldiers watched cartloads of gold and silver being auctioned off and also saw others carry off gold ornaments, jewellery, and camel hair shawls, while still others were seen to dig up floors to hunt for buried cash. War and looting such as this was happening for decades and could not be controlled by the officers.

Thus a son in the Company's army meant lucrative gains for the family back home. But such officers and men were still looked down upon by those in the King's army.

The Sepoy Army

Napoleon had once said that there were no bad troops, only bad officers and that the morale and efficiency of a unit reflected on their officers. According to military historians, Indian soldiers in this respect had been exceptional; all that they required was professional and dedicated officers to lead them. The British seemed to have held this view throughout the regime of the East India Company. There was no native commissioned officer in the Company's rule; a Subedar was the highest rank, upgraded to Subedar-Major that an Indian could aspire to become (Rajkumar, 2004, p. 65).

However, the bulk of the three Presidency armies, Bombay, Calcutta and Madras were filled with Indians. There were three arms – the artillery, cavalry and the infantry. There were no native forces in the artillery battalions which numbered six in all. They were all manned by Europeans. Together with cavalry and infantry, there were 19 European manned battalions to 167½ native manned battalions. There was no cavalry arm in the Bombay Presidency army. All the armies however, had Lascars. In 1785, the total army strength was 73,000 (Rajkumar, 2004, pp. 60–61). For the next 72 years, the identity of the three Presidency armies was kept distinct and though never united into

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one army, they were required to fight together. The complete history of the military system of the East India Company lists the full details of the strength of the army as well as the Nizam's army, of Hyderabad, which came under British protection in 1798. Much later, in 1849, the Punjab force – Sikh cavalry and infantry was raised, whose strength reached 70,000 in 1857.

The Bengal army was somehow given a greater prominence and it formed almost fifty percent of the total Company army strength, 323,623 being the total strength of the Combat Arms (Rajkumar, 2004, p. 189).

At the time of the Sepoy mutiny, while the Europeans in the Bengal Army numbered 59,486, the native strength was put at 170,000. And why not? Apart from the fact that the native forces, in the words of Sir Thomas Munro, were 'quite orderly and easily managed, the native officers were well acquainted with their duties, and conduct almost all the interior details and leave but little for the European officers to do'. Further, 'they might become insolent and careless when left to themselves and European officers are absolutely necessary to direct them but not many are required. One (officer) to a company is quite enough for a useful purpose'. There was the equally important consideration of finances. For one thing, it was cheaper to finance even European troops in India; an individual's pay was just Rs. 36/- against the equivalent of Rs. 185/- in England. One European earned three times as much as a native and the Royal troops were even more expensive (Rajkumar, 2004, p. 59), Balancing economy with safety, the British of course compromised minimally with the artillery arm. A native artillery was raised in Madras during the Mysore war in 1796–1799. The success of the native troops in various British campaigns during 1856 reinforced their fears of putting guns in the hands of the natives and especially so after the 1857 mutiny.

To move the necessary guns and artillery, animals were needed. Men had to drag it all the way to Calcutta due to non-availability of transport animals. One estimate of the number of horses required for moving horse artillery, heavy guns, thousands of rounds of ammunition, tumbrils, forge wagon and stores carts gives a figure of 546 (Rajkumar, 2004, p. 103). For operations in the South, they could not obtain suitable or good quality animals, which became, the main reason for their debacle in the confrontation between Lord Cornwallis and Tipu Sultan in May 1791. During the several droughts, animals died, there was bad weather, the Maratha army failed to turn up, the guns could not be fired and so they were abandoned. There were no cattle or drivers in the employ of the army. Hiring and firing was done on an *ad hoc* basis in the Madras Army. But finally better sense prevailed and eight companies of drivers and draught bullocks were raised. The Madras Army consisted of Naidus, Mudaliars, Panickers, Pillays: Hindus as well as Muslims and Christians who joined the army and were found to be hard working, minding their own business, well disciplined, intelligent and efficient. A common bond existed between them which was characterised by closely working together without any animosity. They ate the same kind of food too (Reid, 1999, p. 41).

The strength of one troop unit varied between the years 1749 and 1752 and there was as yet no native cavalry in Government Service (Wilson, 1882, p. 37). *Peons* were the name given to the First Native foot soldiers and in 1747 there were some 3,000 of them employed at Fort St. David. Over 900 were armed with musket. The Government considered 1,300 men to be adequate to protect all its persons in Fort St. George (600 men), Fort St. David (600 men) and Devicottah (100 men) (Wilson, 1882, p. 72). The Bengal Native Army was raised in 1802. Bombay, Madras, and Calcutta were the main centers of British rule, each with its own forces and Commander-in-Chief but the Commander of the Bengal army was the supreme authority in all matters military. The men who were recruited

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at first into the native armies belonged to the lower castes but there were also Afghan and Turkish mercenaries. But eventually, to give the armies a national flavour, peasants and the sons of large land owners were taken in increasing numbers. Many new entrants were Brahmins and the Bengal army in particular was almost entirely made up of high caste Brahmins (Edwards, 1963, p. 20). The General Service Enlistment Act introduced as a measure to make the Indian sepoy accept service anywhere in the home provinces or abroad (mostly Burma) became very unpopular. A caste Hindu would not wish to cross the seas. But service abroad was essential to keep the military garrison in Burma well supplied with troops. Since troops of the 38 Regiment had refused orders to proceed to Burma in 1852, the enactment of the Bill now made it mandatory to serve abroad or in any of the home provinces (Wolpert, 1993, p. 232; Metcalf and Metcalf, 2002, pp. 99−100).

The transition from Mughal to British colonial rule went in stages. One by one the hitherto independent states were taken, the last was Oudh which was annexed after the Mutiny; Emperor Bahadur Shah was exiled and Nawab Wajid Ali Shah forced to abdicate (India Today, 2000, p. 19).

Lifestyle of the Neo-English Nawabs

The life and living standards of the English people employed at senior levels was in direct contrast to their lifestyles in England and the status of both commoners and Indian sepoys.

The retinues in civilian and military households of the English people in India were phenomenal. A quiet elderly civilian couple needed no less than 57 employees. Some had more than 60 servants, even as many as 110 to serve a family of four! What did these servants do? Apart from being a *dhobi* (washerman), a *darzi* (tailor), cowherd, shepherd, poultry man, carpenters, gardeners, grooms, coachmen, hairdressers, wig-bearers, valets, *hookah-bunder*, ladies maids, children's *ayahs*, cooks, bakers, dog watchers and dog walkers, there were just too many waiting at the tables.

A military officer, a captain who took part in the Mysore war of 1780, had an impressive number of staff comprising his steward, cook, valet, a groom and a groom's assistant, a barber, a washerwoman, fifteen coolies to carry his baggage, his wine, his brandy, his live poultry and milch goats. These servants in turn had their families with them (Woodward, 1978, p. 137).

As someone who was there and had witnessed the British and their army life in particular, the account given by Sir Otto Trevalyan provides an accurate picture of the times (Trevalyan, 1992**)**.

From 1775 onwards, the East India Company had kept a brigade in Cawnpore (Kanpur) for the defense of Oudh; the forces maintained by revenues from the rich and extensive land. In 1801, Lord Wellesley foreclosed the mortgage on Cawnpore and acquired it for the Company, according to Trevalyan. In 1857, there were three regiments of sepoys, the First, the 53rd and the 56th Bengal Infantry, the 2nd Cavalry and a company of artillery men; the total native force numbering around 3,000 against a little over 1,000 of Europeans or persons of European extraction, Eurasians or Anglo Indians. There were about 300 officers and soldiers of English birth attached to the various sepoy battalions. Cawnpore was also host to what was called the covenanted civilians − the so called aristocracy of Indians, certain lesser officials attached to the post office, the public works and the opium departments, people in the railways, merchants and shopkeepers.

At Cawnpore, there was a first class military station. The cantonment area was the unique military quarters for the Englishmen and entirely distinct from the native quarter. There is the sense that an English officer of the Bengal Army, even the lowest ranking subaltern, was a man of abundant leisure whether he was posted in Calcutta or Cawnpore. He was free to indulge in anything that took

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his fancy and had the time and means to do so; from just lazing about to playing not too strenuous games, growing fruits and vegetables, visiting libraries, attending races and dinners given to passing dignitaries or attending the Free Mason's gatherings, or visiting the Breakfast club and Ice club, etc. He had nothing more vigorous to do than gaze at his own horses or at the Patna sheep belonging to the station Mutton club, and lazily attempt to gain a little insight in to the hateful 'Eastern Languages' from a native tutor. He dressed in fine silk and linen to keep him cool in the night.

The Fresh Food Ice Club membership was an essential feature which enabled the English to procure fish and codfish that came from the Canadian lakes and New Foundland and apples from Pennsylvania, all embedded in crushed mass of ice. Therefore, there was no dearth of fresh food. The 'Ice House' located on the beach in Chennai was built to house the ice brought in from Boston in the 1700s. It is a place of deep gloomy corridors and rooms at different levels. It now houses the Swami Vivekananda Memorial. Every Presidency had its ice arrangements for the comfort of the Europeans in the Army and the civilian English families. They could purchase anything − locally sold fish, flesh, fowl, at what they considered low prices, but which the Anglo Indians found to be rather steep for mutton at 6 pence a pound and a fat turkey at 3 shillings a piece. There were other indulgences such as quail, wild duck, snipe and black partridges also to be tried at low prices (Trevalyan, 1992, p. 11). There were exclusive military posts (Trevalyan, 1992, p. 29) such as in the Departments of Adjutant General, the Quarter Master General (QMG), the Commissary General and the Judge Advocate General.

In Trevalyan's descriptions, these officers were high ranking and lived befitting as they perceived it to be their station and position in the Company. Whatever may have been their rank, the Englishmen made their homes with no regard to economy or space.

The British hierarchal system functioned with a small cadre of officers at the top in administration. It was no different in the army. An officer of the lowest rank enjoyed perks and luxuries in India far beyond his imagination. These included spacious accommodation and a horde of servants to do his every bidding and to anticipate his needs and pleasures.

Each lived in a stand alone house surrounded by three to four acres of paddock land with a sort of ditch marking the boundaries. In Calcutta, the residence of a bachelor or subaltern was a single storey brick house with two or three bedrooms, shabby, cobwebby, minimally furnished but well served with a personal staff such as a tailor, a *punkah*-puller (a *punkah* is a ceiling fan made of ruffled cloth strung and fixed to a horizontally hung pole fixed high on the wall near the ceiling; the pole is pulled to and fro manually by a rope, which duty befell a boy or a man exclusively employed for the purpose), and a personal madras valet to spread butter on *sahib's* bread with a greasy wing of a fowl! Drinking water came from the row of jars of porous clay which cooled it. A table full of soda bottles, playing cards, chessmen, *Hindustanee* dictionary, books, revolver, cigars, regimental book club volumes and some 8 or 10 chairs, plus a couch completed the furnishings along with a list of men in the officer's own company. The personal effects of the officer included the sword, buggy ship, rifle and shotgun. In the kitchen department, there would be several boys, assistants for clean up, cook, cook's assistants for food preparation, footmen to bring food and serve and a *khansama* (butler) to supervise service.

Married quarters were rather more grandiose than this but were still somewhat shabby. Description and sketches of the lifestyle lived by the English family men provided by Woodward (1978) depict a vast number of personal and family servants, probably one each to carryout a specific task. Naturally,

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all the servants − men, women and boys were all natives. Whether these people belonged to the family of the sepoys or were outsiders is not mentioned.

A life of plenty and leisure marked the every day routine of the British military officers and men. That they could pursue this lifestyle was fully owed to the native sepoys and Subedars of the Bengal Army who did the brunt of the work associated with the regiments and the barracks.

The officers came to depend greatly on the subordinates (mostly native Indians) in the army, the tiers of subordinates clouded the administrative and moral responsibilities but who in turn served with loyalty and a serene system of mutual comfort and faith was established, said Trevalyan who had witnessed it all (1992).

Under these circumstances, it was never imagined by the British army that their so faithful and obedient sepoys and subedars would rise up against them in revolt, as they did in the mutiny of 1857. This was the last major Indian uprising against the British and though it began with a bang, it ended with a whimper.

Cantonment Quarters of Native Troops

The quarters of the native troops and officers were quite separate from the European sector and they lived in Sepoy lines. These lines were long rows of huts made from mud and bamboo and thatched with straw. Everyone had his own cabin, inviolable and out of bounds. In these accommodations lived numerous relatives, mostly female. The officers lived in their own dwellings at the end of each row/line. Each house had a small courtyard with a few feet high mud wall as fence. Each regiment had a bazaar peculiar in its way, with suttlers pandering to every whim, fancy and taste of the native troops, from food, clothes and ornaments to entertainers and even drugs.

The Brahmin battalion was completely staffed with Brahmin officers and their hierarchal structure in the army ran as follows: in every regiment (Trevelyan, 1992, p. 33) there was a Subedar major (spelled Soubhadhar) or a native colonel and in every company was a Subedar who reported to a European Captain, and a Jemmadar who answered to a European Subaltern. These were the commissioned officers wearing sword and sashes, who sat on courts-martial and were saluted by the ranks. They also carried the musket. But there was no pretence of friendship between the English and the native officers. The native equivalent of the British Army sergeant and corporal were known as *Havildar* and *Naick*.

There was a hierarchal system among the sepoy tribes too and this was based more on cultural/traditional habits and customs than merely on rank. Since most people originated from the villages, even in the matter of food, the customs of their individual village, community, caste and family prevailed. All the sepoys and their head sepoys (Subedar) practiced elaborate rituals. Each would bathe and make ready for prayers in the orthodox Hindu way, and sit in a cleansed/purified place in his house or barracks to eat food (also prepared by observing orthodox methods) served to him by his underling, who would not eat until his master had eaten. Everything was made fresh and the main foodstuffs came from his village. The fare depended on the riches and luxury and the status he enjoyed in his village and community.

Army Emoluments in the East India Company

It has been mentioned previously that the pay of an English soldier in India did not amount to more than Rs. 36. Discussing the origin, propagation and equipment of the British army, and the

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expenditure incurred by the Crown on army officers and transport in England contemporary to the British Raj, Scott (1880) of the British army provided some figures calculated on per diem basis.

Emoluments of the officers of the Trayn (Train) Ordnance corps amounted to 38 pounds 8s 10d, while not specifying the number of officers. For the hire of 1,500 horses, Rs.150/- was expended per diem. The pay of 532 drivers was 39.18s and the cost of 60 country wagons was £600 per *mensem* (month). The horse feed, apart from all else, also included meat which for the 1,500 horses cost 112.10s. This is the only other time apart from the ancient ArthaŚāstra where a meat ration has been indicated for horses.

In India, the officer cadres of the Artillery of course did far better, and for a princely sum varying between £150 p.a. for a first captain and chief engineer and second captain, second engineer of the Artillery to £100 p.a. and £75 (and progressively less to £60 and £50) to the Director of Laboratory and first lieutenant worker.

The pay packets of the sergeant Bombardiers and corporal Bombardiers were fixed at 2 shillings and 1s 6d per diem respectively. The gunners and drummers received 1s per diem (Wilson, 1882, p. 45).

In 1747, one Capt. Alexander Delavaux was appointed as a chief engineer and as a captain of all the settlements and captain of all the Train of Artillery at £200 per annum and as per the Court of Directors' advisement, the Madras Govt. was to provide Capt. Delavaux this sum. The native soldiers' pay was calculated sometimes in fanams and pagodas and cash in the Madras Army and at other times in rupees (Rs.), anna (a), paise (p), and c (meaning cash which came to be known as *casu* in later times). Till the introduction of the decimal system in India in 1954–55, rupee, anna and paise were the currency (there were 16 annas to a rupee or 192 casu or cash/paise per one rupee).

Perks for Englishmen in military service: An officer's special perquisites upon his arrival in India included a suitable residential apartment in the fort, diet money, a *pallankeen* (pallanquin), and servants, just as these benefits were allowed for the members of the Council of Directors. In addition, the Captain was to be given travelling charges at company expenses whenever he travelled from one place to another on company business (Wilson, 1882, p. 45). Like Captain Delavaux of the Laboratory, there would have been several such high ranking officials deriving not only super-pay but all manner of benefits in the service of the Company.

Pay for the natives: It must be remembered here that the native commanders were subordinate to even the European subalterns and their allowances were small in comparison. In 1759, when the appointment was created, the total emolument for a Subedar was Rs.114/- of which Rs. 60-per month came from rank pay as Subedar and Rs. 54-as allowance for the position of command. For reasons not known nor explained, this pay was revised to Rs.127/- in 1766 and remained so till 1785 when the appointment itself was abolished (Wilson, 1882, p. 369**).** One account given by Wilson in the 'History of Madras Army' of the pay of a private soldier provides a figure of 2½ pagodas at 8 shillings to a pagoda to just about 1 pound sterling per month or 75 fanams (at the rate of 30 fanams per pagoda) (Wilson, 1882, p. 114). (Note: a pagoda was later valued at 42 fanams at the rate of 12 fanams to one rupee.) In the Native Artillery at Madras, the total monthly pay check of 107 personnel amounted to no more than 255 pagodas (p) where as the only subedar was paid 16 pagoda, 2 Jemmadars were paid 6 p each, 6 Havildars got 4 p each, 6 Naigues (Naiks) 3 p each, one Drummer and one fifer got 2½ p each. The 2 *Bhesties* (water carriers) got 2 p each and the 88 privates got 2 p each too (Wilson, 1882, pp. 345–346).

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The pay and *batta* of the artillery drivers of the draught cattle in the Madras Army, when it came around to appointing regular drivers under the control of the officers commanding the companies of foot artillery, also had to be provided for. It varied from *Darogahs* to a driver. The monthly pay of a *Darogah* was Rs. 17 of a chowdry Rs. 12 and of a driver Rs. 6 and 8 annas(a). Since they were the backbone of the army's mobility, they were also paid daily *batta*. For the three categories mentioned above, the *batta*, respectively, was 2 a 5 p 87 c, 1 a 10 p 40 c and 1 a 2 p 93 c (Rajkumar, 2004, p. 105). The terms rupee Re/Rs., anna (a), paise (p) and casu/cash (c), were in usage until the middle 1950s. After the decimal system was introduced, the term rupee was retained as well as paise where 1 Re = 100 p).

Although pay scales in the other armies have not been mentioned, it is presumed that in all the Presidency armies, the pay scales were the same or very similar. At Fort St. David on the Coromandel Coast, a military garrison was settled under the command of a major, a captain and commander at pounds 250 per annum, paid in pagodas. In the same settlements, the per diem payments for one Capt. Lieutenant were 5 s, for one engineer 4 s, for 1 adjutant 5 s, for the 4 sergeants 1 s 8 d, for the 4 corporals 1 s 2 d, for the Drum major 1 s 8 d, for the two drummers 1 s 2 d each and for the 70 or 80 private sentinels 10 d. In another Company, the captain got slightly more i.e. 10 s and a lieutenant 5s (Wilson, 1882, p. 69). Such a disparity in pay has not been explained.

As the century of British rule progressed, life for the ordinary folk seemed to be a humdrum affair, no excitements of public celebration, pageants or spectacle as in the days of the rajas. The Sepoy on the other hand found that his pay of 7 rupees (14 shillings) a month was raised by one rupee after 16 yrs of service or by two rupees after 20 yrs of service! Since they lived together in a Company, there were expenses towards clothes, (up to five rupees per year), towards washerman, barber and sweeper to be shared. These deductions amounted to less than six annas per man per month. The Sepoy in the Bengal Army sent at least 3 rupees, sometimes even 4 home to his family living in the villages of Oudh and Bihar from where most or all of the recruits originated. (The modern army sepoys, now called jawans, on the other hand have their families living with them in certain peace postings and training establishments).

After all these deductions from his month's pay there remained just three rupees or often even less (only one and half rupees) in the sepoy's pocket (Mason, 1974, p. 199).

While these were the salary scales on regular pay, the troops were often moved during operations and were paid their daily *batta* until 1755, presumably in addition to the regular pay but one fine day, the government in its wisdom decided to discontinue payment of the outstation *batta* and the commanding officer alone was exempted because he incurred expenses while entertaining travellers (Wilson, 1882, p. 118).

Food purchasing value of money in the mid 1700s: It must be clear to the readers that there were no free meals and rations given to the troops and the pay they received had to suffice to meet personal and family needs of food, clothing and shelter. Discontinuing the daily batta in outstation manoeuvres brought great hardship to the soldiers. What would they eat on their own? How would they eat on their pay packets which would have to be stretched to give them adequate food? How much cash could they really carry outstation to allow them to buy food from local markets? The readers of today may be better able to appreciate this dilemma of the late 1750s by glancing at the market price of provisions and other necessities in the rural southern bazaars. The European soldiers were harder hit perhaps but they were trained differently.

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A market survey was carried out in Trichinopoly on March 6, 1755 by a Major Kilpatrick. He later represented to the Government to reintroduce *batta* on the basis of the market prices prevalent at the time. He backed his petition with a prepared price list (Table 6.1) which was submitted to the Board of Directors of the Company. Even though by today's reckoning the prices seem to be incredibly low, the sepoys had a hard time living practically hand-to-mouth on the remnants of their pay packets. Food was not the only thing they needed.

Table 6.1: Market Price of provisions in Trichinopoly, 1755

Rice	: 12 seers* for 1 rupee
Wheat	: 2 ¼ seers for 1 rupee
Mutton	: 6 seers for 1 rupee
Beef	: 10 seers for 1 rupee
Firewood	: 8 small bundles for 1 rupee
Fish	: Not available

* One Seer or ser carried different values. In the old Madras Presidency, one seer was equal to 8 palams of paddy or rice.
Source: Wilson, 1882

They needed other necessities such as shoes (which wore out pretty fast), which cost 2 quarters per pair, coarse shirts cost Re. 1 and 2 each, a coarse cloth waistcoat cost Re. 1. The washerman and the barber had to be paid for each service at half a rupee. And the soldiers could be compelled for long stretches of time to buy him daily food and necessities. Barely 2 or 3 rupees a month were all that he could save if he did not send any money home.

How could he budget his money? He purchased 1 seer of rice for 13½ cash, 16 cash worth of mutton or beef, scraps of fish perhaps, about 6 cash worth of ghee or butter oil and small amounts of pepper. Salt perhaps for 2½ cash, a small amount of buttermilk for 4 cash and firewood to cook his food for 8 cash (Wilson, 1882, p. 114).

Their simple food was made up of rice, fat, meat, buttermilk and condiments and while probably being adequate enough in quantity and major nutrients, the diet seems to have been devoid of any fresh vegetables and fruits. If the men did buy or scrounge for such dietary accompaniments, it is not mentioned. But basically his eighteenth century diet looks to have been a deficient meal both quantity and nutrient wise.

Further, this partly nutrient deficient meal cost the soldiers 2 fanams and 12 cash per day (@ 20 cash to a fanam), around 78 fanams which was much above their monthly pay of 2½ pagodas, or 75 fanams not counting other necessities.

Even as the twenty-first century reader is awed at the 1750s price structure of commodities, for sepoys of the time it would have been a hardship of no small order when deployed out in campaigns and with no additional *batta* to help stretch the budget.

On an average, a man is supposed to consume 2 lbs of grain per day. While we will not argue over the correctness of this figure given by Mason (1974, p. 200), there are different types of staple grains in North India such as rice, wheat and millets, eaten in that order by the rich folk, common people and the peasants respectively. This is a long tradition and practiced till date. Rice was more expensive than wheat and the millets gave a dark, coarse or bitter flour and therefore were not readily accepted grain both by people and livestock. There are of course vegetable preparations to accompany the staple cereal for which spices, salt, ghee, etc. are used.

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Around the 1840s, the cost of grain − 60 lbs per month (at 2 lbs per day) for a man was two and half rupees. A special allowance was sanctioned in 1847 to cover the cost of grain if it rose beyond this level. Usually at that time, one rupee fetched 50 per cent more millet as wheat, thus for two rupees one could purchase 60 lbs of millet. So a pay packet that after deductions left about three or two rupees plus to be spent on food would seem to be sufficient to feed a man with the basics. Rice was the staple in the South but in the Bengal Army, the Rohillas and men from Oudh would eat only wheat and if this was not affordable, then millet. The supplies were purchased from regimental shops whose business it became to stock and store all sorts of grain.

But as facts stood in the mid 1800s and well into the 1900s, even in England, the peasants did not make more than 10 shillings a month and could not afford to eat meat except at harvest time. A British soldier in India in the middle 1800s received just 9 rupees a month after deductions.

A grass cutter is said to have earned 2 rupees in the early twentieth century. A land worker on the farm received nothing but food and protection from the landlord whose land he tilled and 2 rupees in cash every six months or so (Mason, 1974, p. 201). By these standards, 2 or 3 rupees in the 1800s would seem to the men of that time to be a fairly decent amount.

By comparison, soldiers today in independent India are paid full salaries plus compensation for hardship areas, they are provided with free nourishing meals, they are clothed and shod appropriately, fully equipped and given vehicles with fuel when on duty.

Army Pension

For those sepoys who were on pension, even if it was Rs. 3 (after 1796), it was a sum very welcome after 20 years of service. It was revised upwards in 1836 as per Lord Bentinck's proposal to Rs. 4 after 15 years of service for a sepoy; after 40 years retiring as Subedar he would get Rs. 40 a month; and a sepoy retiring as Jemmadar Rs. 20. During service, the sepoy was paid five and a half rupees and a Subedar Rs. 52 on long home leave or furlough. Allowances were paid to the sepoy's families when he went on overseas service and a pension to the nominated heir if he was killed. Administratively all these provisions and paper work were checked and monitored every quarter (Mason, 1974, p. 202).

Such pay, provisions and facilities did not exist in the feudal and imperial system in India. The hereditary troops owed allegiance to their feudal lords much as it was in medieval Europe and the troops or mercenaries were hired for a specific campaign. Neither regular pay nor a pension figured in the scheme of things with the Mughals or the Marathas. They took no responsibility for the men after they left the army.

Therefore joining the army of the Company was a prospect that enticed all the Brahmins and the Rajputs, the Muslims and the Sikhs, the Nairs and the Mudaliars, and the Marathas in all the three Presidencies. And with the level of pay and provision for pensions as described, it was surely the cheapest army to be maintained anywhere in the world.

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7

Modern Armed Forces of India

A major change occurred after the Sepoy Mutiny in 1857. The East India Company ceased to exist as such; the European troops merged with the Imperial British Army and the Indian troops were re-organised.

The Indian Army before Independence

Grouping based on class and religion were the main features in the army. In the re-organisation, after abolishing some and amalgamating the others in the then existing British and Indian regiments, the ratio of Indian troops to English troops was 2 to 1 in the Bengal army and 3 to 1 in the Bombay and Madras armies. Even the recruitment patterns changed. While earlier there were mixed regiments in Bombay (men from different parts of the country), the Bengal and Punjab army men of different classes and religions were now grouped into separate companies of the same regiments. The native officers of these Companies belonged to the same class and religion. Thus Sikh, Rajput, Brahmin, Punjabi, Muslim, Pathan, Dogra, Gurkha, even Pioneer with *mazhabi* Sikh Companies came into being and existed as water tight entities ostensibly for cohesion and efficiency. There was also severe curtailment in the recruitment of high caste Brahmins and Rajputs, who until then had filled the ranks of Bengal Army. A chasm may have appeared between the different classes and castes grouped in the name of efficiency to avoid any further subversion in the army. Such separate entities continue to exist till today (Gautam Singh, 1966, pp. 241−242**).**

Strangely the people of the South, Central and East who were loyal and fought valiantly alongside the British were now downgraded as of little military worth. Keegan (1979) wonders whether this feeling of identifying with race, community, religion, caste and local affiliations would ever be banished (Keegan, 1979, p. 309). Another upshot of this policy was to induct others from the North and Northwest − the so called 'martial races' − Muslims, Sikhs and Gurkhas of proven loyalty.

In the two subsequent re-organisations that quickly followed, the number of English officers was progressively reduced in the regular cavalry; artillery and infantry regiments were kept to 6 per unit. The Company's European infantry, artillery and cavalry regiments were transferred to the British Line under various nomenclatures like Regiments of Foot, Royal Artillery, and HM's cavalry. There were multiples of these regiments: 42 cavalry, 142 infantry, 9 artillery and 3 Sappers and miners. The Madras Army had classes labelled as Christians, Muslims, Marathas, Brahmins, Rajputs, Telugus and Tamils. But if one considered the food related issues of the soldiers of that period, the one advantage seen of such a classification, is in the matter of food preferences. People of one so-called 'class' hailing from the same background and region eat similar types of food; similarly**,** they observe and practice similar rituals. Getting together in one company, there would be less dissension and disagreements when a common menu is to be decided upon. But communal eating in a mess was still to come.

In 1878, the army's strength was 200,000 including 65,000 British troops. By deft rearrangements into different regiments, the Crown sought to cut expenditure and improve efficiency. The ordnance department and transport services also saw significant changes. New Commissariat Regulations were

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applied to the whole of India. The term 'native' was abolished in respect of regiments and corps. Another significant change was to put the pensioned off sepoys on a reserve list, who would return to attend a month's refresher training to be made fit for war readiness if required. There was now India Command and Burma Command. The Hyderabad contingent was broken up. New numbers designated the army units. The Gurkha units were separately numbered (Mason, 1974, p. 246). The Presidency Staff Corps were merged into the Indian Staff Corps, a new term, to which all the officers of the Indian army now belonged.

Sons of John Company Unified

The armies of the East India Company have been called the 'sons of John Company' in India and Britain.[1] By 1895, the three Presidency Armies were merged into one Indian Army which was to function administratively under four commands − the Punjab Command which included NW Frontier, the Bengal Command, the Madras Command (including Burma) and the Bombay Command (including Sind, Quetta and Aden) (Rajkumar, 2004, p. 6). There was only one Commander-in-Chief, not one for each Presidency. The Indian Staff Corps was abolished in 1902 under the C-in-C Lord Kitchner and the Viceroy Lord Curzon. All officers would now be gazetted directly to the regiments. The cavalry and the infantry lines were renumbered but the Bengal units were preferentially allowed to choose and take the first numbers, a point that was resented by both the Bombay and Madras armies. Another re-organisation in 1908 divided the entire army into the Northern Army and the Southern Army. In the beginning of World War 1 in 1914, the total strength of the fighting forces of India was 150,000, which rose to 1.5 million in 1918 (Gaylor, 1992, pp. 1−4). For military efficiency and reasons of economy, other structural changes were introduced. The once too many cavalry units were whittled down, all of which were amalgamated into re-formed linked pairs (Gaylor, 1992, p. 11).The infantry and the Pioneers were also put through similar changes and re-grouping. Both contained British and Indian officers and Indian ranks.

Indianisation and Indian Military Academy

The rewards of fighting in the many campaigns of the First World War in France, in Gallipoli, in the Middle East and East Africa, and protecting Hong Kong, Singapore and Malaya in the East and keeping vigil on the Northwest Frontier are said to have come about in the form of the Montagu-Chemsford Report. The Indian Army with British officers was to be Indianised. Ten gentlemen cadets were to be admitted to the Royal Military College, Sandhurst. The graduates would be commissioned and called the King's Commissioned Indian Officers, posted for the first year overseas in the same way as their British counterparts, before joining an Indian regiment. Of course there were several phases in this Indianisation process (Gaylor, 1992, p. 22), which were slow. A few among the first batch of the newly commissioned officers refused to transfer from the Indian Army units to which they had been earlier attached.

It was found that there was a thirty per cent failure rate among the Indian cadets in the Royal Military College, even given their educational status and British Public School backgrounds. Surely Sandhurst could not be harder than a somewhat comparable training establishment, the Royal Indian Military College, RIMC, at Dehradun, which was established in 1922. Studying at the RMC Sandhurst was a drain on the family's finances and resources even after graduation because of the abysmally low pay while there was no doubt that those who chose to join the ICS, medicine or law became self-sufficient. Therefore, another academy was thought to be essential to improve the

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availability of Indian Officers (Gaylor, 1992, p. 24). Accordingly, the Indian Military Academy, IMC, was established also in Dehradun, in 1932 with an initial intake capacity of 100, but by 1938, there were 56 officers who passed out each year. No Indians needed to go to Sandhurst. The Royal Indian Military College came to be the premier feeder institution of cadets seeking entry into the armed forces whether by preparing them for Sandhurst, the Indian Military Academy, the Joint Services Wing or the National Defence Academy (Singh and Mishra, 1997).

While the squadrons of the cavalry and the infantry continued to be commanded by British officers, the troops and the platoons had the Viceroy's Commissioned Officers (VCO). These VCOs were regarded as being important in assisting the British officers with problems of a local, ethnic and cultural nature. They were now phased out and in their place, the newly commissioned Indian officers would command the troops. At the end of World War II, there were 8,300 Indian officers among the total officer strength of 41,500. When the partition occurred, both India and Pakistan got officer corps.

Of the many princely states in 1914, 29 participated in the Imperial Service Troops providing cavalry, infantry, artillery, Sappers, Signals, Camel Corps, and Transport Corps. Out of a total of 22,479, 18,000 served overseas (Gaylor, 1992, p. 51). After World War I, there was a decision to arm and equip a number of the State Force units which were named Field Service Units on the same lines as the Indian Army in order to provide better training and for uniformity of the troops, but at the time of World War II, these units required re-training.

Commissioning into the Indian Army

There were Risaldars, Subedars and Jemmadars − the Junior Commissioned Officers of the erstwhile Indian Army, and which have no equivalent titles in the present day, but which could be equated to the master Warrant Officer, Master Signaler Risaldar and Risaldar class I RVC and Master Engineer (Rajkumar, 2004, p. 347). These were the VCOs. Commissioned Gurkhas were Gurkha officers. But almost all had gone up the ranks. Although in a strict sense not officers, they were nevertheless bestowed with the respect and social considerations befitting an officer. They were recognised as *sahibs* by even the British officers, and were the only link between the latter and the Indian soldiers in all matters of army discipline.

Those VCOs who passed out of Sandhurst, and others who were capable, the non-commissioned officers like Jemmadars and those who distinguished themselves were granted the King's Commission. In 1926, there were 42 King's Commissioned Indian officers (KCIO), who passed out of the Royal Indian Military College, Dehradun. By the time World War II was declared in 1939, this number had risen to 600. Those who volunteered to join during the war were given Emergency Indian Commissions (EIC). The demand for officers having increased steeply, officer training schools opened in Mhow, Bangalore and Belgaum. When the war ended, there were 14,000 officers as KCIOs, ICOs (Indian Commissioned Officers) and Emergency Indian Commissioned Officers.

The matter of pay: There was a very visible pay disparity between the officers, not just by rank alone but by where they passed out from and what commission they held (Gautam Singh, 1966, pp. 267−268). Sandhurst graduates naturally were at the top of the scales; no less than a difference of Rs. 100/- to Rs. 150/- existed between KCIOs and ICOs up to the lieutenant's rank, of Rs. 160/- to Rs. 360/- in a Captain's rank, and Rs. 300/- at the Major and Lt. Colonel's level. There was also an additional package for married officers to the tune of Rs. 100/-.

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In July 1947, a revision of scales saw a second lieutenant getting Rs. 350/- and a full General Rs. 3000/- and incremental scales in between inching by Rs. 150/- to 250/- with every next higher rank and only showing a steeper increase (about Rs. 650/-) from a Brigadier's pay to that of a Major-General.

Three other important Corps were established as the need arose. These were the Royal Indian Army Service Corps, The Remount and Veterinary Service Corps and the Indian Catering Corps. These Corps, as will be shown later, became the indispensable elements of the supplies and transport chain and food preparation and service in the garrisons and field messes.

Emergence of the Modern Armed Forces

> 'The safety, honour and welfare of your country come first, always and every time. The honour, welfare and comfort of the men you command come next. Your own ease, comfort and safety come last, always and every time.'

Thus spoke Field Marshal Sir Philip Chetwood, the Commander-in-Chief of the Indian Army at the inauguration of the Indian Military Academy in December of 1932 (Lachman Singh, 1997, p. 46). The Empire is no more, the Indian Army split into two at the time of Indian independence. India became a vibrant democracy and a republic. The title of C-in-C passed from a military general to the President of India, a civilian.

The officer class and other ranks of the present day Indian Armed forces include anyone who is physically fit and of the prescribed age, possesses the basic minimum education prescribed and has the preparation, grit, tenacity, determination and intelligence to go through the entrance tests and qualify in the Service Selection Board's interview (officers) and district level interviews (for other ranks). It is a multi-ethnic, multi-religious, multi-denominational, multi-lingual, multi-regional class, its members hailing from families of the traditional soldier class, the so called martial races or others such as priests or traders or farmers or Gurkhas (though all of them may have to struggle to achieve the same standards of education and physical fitness necessary). All of them consider service in the armed forces as soldier or officer, a matter of honour for the individual member, for the immediate and extended family and for the community and even for the village as well. Until very recently, joining the military service was an important option in the career choices of a young aspiring man. A life of dignity, honour, respect, while serving your country and deriving reasonable benefits as pay, allowances and perks was not to be had in the service of the government outside the Indian Civil Services. Now that there are far more career choices with better financial packages, infinitely less dangerous and equally or more glamorous, there is no special call to a particular religion or caste to send members into the Armed forces. An officer or a soldier belonging to one religion is no more or no less than the one belonging to another except of course as per their rank. While in India there is still a strong family tradition of enlisting or opting for the Armed services, following in the footsteps of fathers and grandfathers, there is no such thing as Hindu or Hindi soldiers nor does such a distinction exist in India as against the 'Islamic soldier' of Pakistan (Lachman Singh, 1997, p. 67) where the entry to the officer class came from the sons of JCOs and NCOs, of landlords, government officials, Army Officers and other well-to-do families, although officers in both countries claim their legacy from the British Army.

Many authoritative treatments have been written on the subject of the Indianisation of the Army in India, and on its re-organisation and structure, tracing the Army's history and evolution (Venkateswaran, 1967, Lachman Singh, 1997, Rajkumar, 2004, Keegan, 1979, Elliot, 1935–1945,

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Gautam Singh, 1966). What emerges from all that they have said is that the rabble, the ragged, the haphazardly trained and rather casually disciplined sepoys recruited to protect the properties of the East India Company and fight the battles of expansion were brave and loyal, and under British discipline and training and under officers as leaders and mentors, got transformed gradually over a period into a tightly knit, reliable and extremely able fighting group. It seems therefore that readily accepting the European discipline and adopting their method of warfare only added to the warring capabilities of Indian sepoys, who by tradition were raised and functioned on the tenets of the Indian art of war. They not only performed in an exemplary fashion in various frontier wars but also in World Wars I and II. There were 2,500,000 men of all classes in the Indian Army in World War II (Keegan, 1979, p. 30). Major General J.G. Elliot in describing the story of the Indian Army during 1939−1945, gave particular accolades to the contributions that both the Gurkhas and the Indian soldiers made to the British elements. They were frugal, which was a standard for everyone to learn, they expected hard times and made the best of them and they moved light. The English man brought his priceless gift of easy bonhomie; all three races of fighting men came together naturally because all possessed in liberal measure of that unfailing catalyst − a sense of humour (Elliot, 1945, p. 11).

Organisation at the Time of Independence

At the time of independence, the Imperial army which was 500,000 strong was divided, one-third going to Pakistan and two-thirds to India. While in India, in its secular nature, unit identities were preserved and posting of soldiers of different religions between units resorted to for homogeneity, in Pakistan no non-Muslims were accepted in the army (Keegan, 1979, p. 303).

From August 15, 1947, the organisational set up showed that the three wings of the Armed Forces were headed respectively by the Flag Officer Commanding Royal Indian Navy (FOCRIN), the Commander-in-Chief Army, Army Headquarters and Air Marshal commanding Royal Indian Air force (Air HQrs), all falling under the Defence Ministry headed by a Defence Minister in the cabinet of the Governor General as well as the Constituent Assembly (Legislative) (Rajkumar, 2004, p. 42). There was a Chief of Staff or Chief of administration, five naval commands located at Bombay, Cochin, Madras, Vizagpatam (now known as Visakhapatnam) and Calcutta. In the army, there was the Chief of General Staff (CGS), Adjutant General (AG), Quarter Master General (QMG), Engineer-in-Chief, and Military Secretary (MS) as well as three commands − Southern, Delhi and East Punjab (created after partition) and Eastern. In the Air force there were two equal wings under a Senior Air Staff Officer and Deputy Air Commander as one and under an Air Officer-in-charge Administration as the second. These two officers looked after the operational group and training group respectively.

On March 25, 1955, the Indian Prime Minister, Pundit Jawaharlal Nehru informed the Lok Sabha (Indian parliament) that the heads of the three Services would henceforth be known respectively as the Chief of staff of the Army, of the Navy and of the Air force instead of Chief of Staff and Commander-in-Chief, not to lessen the authority but only in keeping with the provisions of the Constitution. The British officer of the Royal Navy who would succeed the Naval Chief at that time would be the last British officer to command and thereafter his successor would be an Indian (*The Hindu*, March 26, 1955, reproduced in *The Hindu*, March 26, 2005).

The Supreme Command of the Armed Forces is now vested in the President of India. The only time the Armed Forces collectively salute the President is on the Republic Day, the 26th of January every year.

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The restructuring of the Army under the British Raj paved the way for its modernisation. Today it is a force to reckon with, its mobility and effectiveness comparable to European and other western armies. Today, India has the second largest Armed Forces in the world. Internally, some vexing border issues continue to exist even as new and pressing demands are made on the force's physical presence for active protection and peace-keeping purposes in international situations arising in geographically far away lands. There have been serious battle engagements on the borders with Pakistan (1948, 1965, 1971, and 1999) and with China (1962) as well as other conflicts in 1969 and 1978. The regions of Jammu and Kashmir, the western borders, the northeastern terrains and Arunachal Pradesh need intensive patrolling, army deployment, mobility, equipment, supplies and support.

India's Force Strength

The modern Indian defence forces are structured and organised as three wings of the Armed Forces – the Army, the Navy and the Air Force falling under the jurisdiction of the Ministry of Defence, Government of India, and the Paramilitary and Central forces coming under the Ministry of Home Affairs.

The strength of the Forces has steadily grown since independence by recruitment, modernisation, skills training and weaponisation. From the 1970s to 2004, the overall picture has changed as shown in Table 7.1.

In the regular Armed Forces, there are 1,298,000 active personnel in the three services combined who are all volunteers with 1,100,000 personnel in the army alone of which 800,000 are available for combat formations (Bennet, 2001). The Air Force has 145,000 personnel and the Indian Navy 53,000 (including 5,000 in naval aviation, 1,000 marines and 2,000 women). In addition, there are reserve personnel – 300,000 in the army, 46,000 volunteers in the territorial army, and 140,000 in the Air Force and 55,000 in the navy. These statistics differ slightly according to Singh (Jasbir Singh, 2004) from those given elsewhere.

Table 7.1: Strength of the Indian Armed Forces from 1979 to 2004

In 1979 (after Keegan, 1979)	*In 2004 (after Jasbir Singh, 2004)*
Between 1975–1979	
Army 950,000	1,100,000
Navy 46,000	
40 major vessels	53,000 (+ 5000 naval aviation + 1000 marines + 2000
1 aircraft carrier, 2 cruisers, 8 submarines, 375 smaller craft	women)
Air Force 100,000	145,000
670 combat aircraft	701 combat aircraft
Paramilitary Forces: 300,000	~ 900,000

The role of the army: The army exists to safeguard the territorial integrity of the nation against external and internal threats, and in peace time to assist the civil authorities during natural calamities (Rajkumar, 2004, p. 303). A far more specific purpose and role for the army has been defined in the Kargil Review Committee Report (1999, p. 81). The primary role of the army is to safeguard the national borders against external aggression and to protect the integrity and sovereignty of the nation. It goes on to express threat perception and states that the threat assessment for any theater of operations is made at the highest relevant level and covers not only the total forces available

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with the adversary in a particular sector but also the forces that he can specifically apply within the limitations of his logistic capability and the terrain. 'On this basis, the formations are tasked and provided necessary resources', it concludes.

Under the overall authority of the Chief of the Army Staff, there are the Vice Chief, two Deputy Chiefs of the Army Staff, the Adjutant General and the Quarter Master General. A very elaborately structured organisation functions under the Office of the Army Headquarters (Rajkumar, 2004, p. 304). By the present nomenclature, the latter is known as the Integrated Headquarters, Ministry of Defence (Army).

The strength of the Army as of 2009 is shown in column one of Table 7.2. Today, there are six Operational Commands or field armies viz. Southern, Eastern, Western, Southwestern, Central and Northern Command and one Training Command, equivalent to field armies and under a General Officer Commanding-in-Chief (GOC-in-Chief) who is of the rank of a Lieutenant General. The Army is placed under the overall command of the Chief of Army Staff (COAS) of the rank of a General actively supported by the Vice-Chief of Army Staff (VCOAS), a Lieutenant General.

For the uninitiated, the organisation within the army has formations called the commands, corps, divisions, brigades, battalions, companies and platoons, the last being the smallest unit (Fig. 7.1). A formation has three subordinate formations or a unit has three subunits.

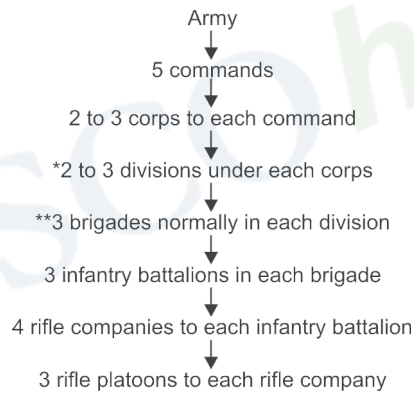
Army
5 commands
2 to 3 corps to each command
*2 to 3 divisions under each corps
**3 brigades normally in each division
3 infantry battalions in each brigade
4 rifle companies to each infantry battalion
3 rifle platoons to each rifle company

Fig.7.1: Organizational structure of the army

Organisation in the Army follows a three-tiered system generally (Verma, Hiranandani and Pandey, p. 14, 2008)

*An infantry division consisting of brigades, artillery, engineers and ASC is the smallest organization which is fully self reliant.

**A brigade is not independent except in case of a few mountain brigades entrusted with small tasks.

There are 10 Corps Headquarters. Each Corps' major formations are armoured divisions, mechanised infantry, infantry divisions (each again self contained with brigades of infantry, artillery and an armoured regiment), mountain divisions, independent combat brigades (a composite comprising of armoured, infantry, mountain and parachute/commando units) artillery brigades, air defense brigades and engineer brigades. The mountain divisions were formed in 1963 following the war with China in the Himalayas in 1962, after the bitter experience of deploying an army not geared for mountain warfare.

The current global perception about Indian military strength is that it has a sophisticated defense industry able to build Soviet tanks, Swedish Bofors under license and that its science and technology

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Table 7.2: Organization and Strength of the Indian Armed Forces, 2009

Army	*Navy*	*Air force*
Commands: 6 regional + 1 training	4 Principal + 1 submarine + 1 naval aviation Commands	5 Principal +2 Maintenance and Training (Support)
Strength		
Active 1,100,000 *Reserve* 800,000 (300,000 within 5 years and 500,000 until age 50) Territorial Army Volunteers-40,000 in 48 battalions	55,000 (includes 7000 Naval aviation, 1200 marines, 2000 women) 8000 in Coast Guard	1,25,00
13 Corps (with 3 Strike Corps)	9 Bases* 2 Fleets 16 Submarines	
Combat units- 68 armoured Div, 319 Infantry battalions, 300 artillery regiments (3 Armoured Division (Div) 10 Mountain Div, 4 Rapid Div, 18 Infantry Div, 2 Artillery Div, 355 infantry battalions (25 mechanized, 11 Para, 2 SF Commando, 300 Artillery regiments with SSM Prithvi and Agni.) 3 Engineer Brigades), 22 helicopter squadrons 18 Air Defence Brigades	***Surface Combatants*** 1 aircraft carrier 8 destroyers 11 frigates ***Patrol and Coastal Combatants*** - 49 (include corvettes, off shore and inshore patrol craft, mine sweepers, Amphibious crafts, support vessels like tankers, tropedo recovery, tugs, survey and hospital ships) ***Naval Aviation***, combat aircraft-35, Helicopters-97, plus 15 squadrons for Air attack, Antisubmarine, maritime, Transport and Communications, Search and Rescue	***Combatants*** 565 Combat Air craft 20 armoured helicopters 39 squadrons − fighter ground attack and fighters (Migs, Su-30 MKI, Mirages, Jaguars 4 sqdr (AWACs, recon tanker, maritime attack,) 2 sqdr-attack helicopters 13 sqdr Transport aircraft 19 sqdr Helicopters Isquadron for VIP flight craf 237 Training aircraf 5 Unmanned aerial vehicle (UAV) Nishant
Weapons System Main Battle Tanks, MBT-3928 (consisting of T-55, T-72, Vijayanta, Arjun, T-90, & PT-76, many types of guns, rocket launchers 2 SAM Groups	***Weapons Systems*** Prithvi (ballistic) cruise/Antiship; SAM (Barak and others); AAM, ASM, ASCM, Torpedoes, Main guns, Air Defence guns, ASW Rocket Launchers of various kinds	***Weapons system*** SSM, ASM, AAM, SAM

The total strength of the Armed Forces is shown to be 1,288,000 (active) and 1,155,000 as reserves. Compared to figures available for 2004, there have been changes in all the three Services in respect of personnel strength and combatant units; and an attrition of some 36,000 personnel has been recorded in the 2009 estimates against the 2007 figures.

Source: Jasbir Singh, Indian Defence Year Book, 2004, 2007, 2008, 2009

***** A new integrated Naval Base is getting ready on the western seaboard at Karwar in Karnataka, the INS Kadamba, said to become India's fourth Naval Command Headquarters. It will be the biggest such base this side of the Suez. It will have a huge anchorage, a long wide jetty, berthing facilities for 10 ships, logistics to administer and accommodate more than 1000 officers, sailors and their families as well as a modern repair shipyard. Currently, 5 ships of the Naval Surface fleet are based out of INS Kadamba. Eventually in phase II, it will be able to house 300 officers, 2500 sailors and allow large ships like Admiral Gorshkov (rechristened INS Vikramaditya) the aircraft carrier (*The Hindu*, Sunday, May 20, 2007).

SAM-Surface to AirMissile. SSM-Surface to Surface, ASM-Air to Surface, AAM-Air to Air.
BrahMos missiles are expected to be made ready for all the three Services.

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base has developed and produced a main battle tank *Arjun,* missiles like the medium ranged SAM- *Akash,* quick reaction low level SAM- *Trishul*, a 250 km range tactical SSM *Prithvi* and a 3rd generation fire and forget ATGM *Nag*. Further, very soon the small arms will be replaced by Indian designed 5.56 rifles, carbine and machine guns presently at the prototype stage (Westhorpe, 1991). Three Corps under Western Command HQ in Chandigarh are meant for mobile armoured warfare operations on the western borders. The Northern Command HQ, Udhamour, controls three Corps deployed in the climatically hostile mountain ranges in Kashmir on the ceasefire line and in Ladakh on the Chinese border. The Eastern Command HQ, Kolkata, faces both extremes of weather and terrain and threats of insurgency from Nagaland and Assam and of Chinese incursions across the mountains. A large number of mountain divisions and Special Forces are deployed in this area. The Central Command HQ, Lucknow, has a strategic role with its one Corps held in readiness to support the Eastern Command. The Southern Command HQ, Pune, is assigned different tasks with its Strike Corps on the western borders and another Corps for security operations in Southern India. The Southeastern Command HQ is in Jaipur.

Counter Intelligence and Jungle Warfare School (CIJWS): The army's job in the Northeast is difficult in the rain washed dense jungles of Manbhum in Arunachal Pradesh infested with militants and insurgents. Different skills and the art of jungle survival are essential for tackling the brutal traps and ambushes laid by insurgents from Myanmar, Bangladesh, China and Bhutan and the ULFA militants with their daring and cruel raids and gunfire annihilations of civil populations. The Army's Counter Insurgency and Jungle Warfare School in Mizoram provides skills training for men who are posted in these regions (www.Bharatrakshak.com/land-forces units/institutions/91.cijues.html).

High-altitude training: A fallout of the Kargil conflict was also a realisation that the troops needed to be especially trained for high altitude (HA) combat. In what way would this training differ from how the troops are prepared for Siachen posting? Only selected volunteers are trained for mountain operations and acclimatisation to the intense cold and high altitudes of Siachen. They man the gun perches and live in bunkers on selected locations and their job is to keep vigil. They spend not more than three months in one tour of posting. In Kargil, there was a different situation where a number of troops were required to be deployed suddenly and quickly. And to do this, it was felt that there were not enough troops and battalions specialised in mountain warfare. It was a definite handicap.

The HA commando school or the *Parvat Ghatak* at Tawang, Arunachal Pradesh, very near the Indo-China border, situated at 15,000 ft is the highest place in the world to accord the necessary training to operate under temperatures at −20˚C and below. Run by the Tawang-based Korea brigade, a hand picked platoon of one officer, one JCO and 26 other ranks are subjected to an intensive four-week training capsule to toughen them up, develop skills, craft and capabilities to go behind enemy lines, carry out subversive acts, commando raids and learn the art of survival under such extreme conditions. This training is preceded by a pre-training sojourn at different altitudes for acclimatisation. Men posted to Kameng sector must go through this process which proceeds with first halt for six days at 9,000 ft of which there are two days of rest, two days of short walks and then two days of longer walks of 5 km each; the second halt at 12,000 ft also sees a similar protocol but may be of a little shorter duration. After this the men are considered ready for the activities at 15,000 ft. The training here consists of physical exercises like long distance walking, jogging, running early in the morning followed by theory and technical lectures and demonstrations, direction finding, compass reading, walking the rope bridges laden with heavy clothing, parka, boots, solar protective goggles, gloves, cap and backpacks (www.Bharatrakshak.com/landforces/articles).

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Special Forces: From the time of World War II (Bennet, 2001, p. 145), there have been Indian Special Forces in the form of commandos fighting the Japanese in the mountains and jungles. This tradition of Special Forces was carried on in India after independence. Now the paramilitary commandos formed after the 1965 Indo-Pakistan war are among the premier Special Forces. The first battalions participated in the invasion of Bangladesh in 1971 and went as part of the Indian Peace-Keeping Force in Sri Lanka in 1988.

The Red Devils Parachute, another unit of the Special Forces was formed in 1990. The Para commandos are highly trained in combat skills in HALO (High Altitude Low Opening) and HAHO (High Altitude High Opening) parachute techniques. Dressed in black, bedecked with gadgets and tools and superbly equipped with combat necessary devices, they can be deployed in many different kinds of missions − counter insurgency, anti-terrorist and others. Their tasks include provisioning of the elite infantry's battle groups as well as clandestine operations. On regular training along with other armies and special courses abroad, the Special Forces unit is a highly capable, powerful and adaptable section of the Indian Army.

Joint Exercises: Indian contingents have periodically participated in simulated field maneuvers with the armies of other countries. Such events are said to enhance learning by experiencing various simulated combat situations helping to hone the skill and performance of units in alien situations. Living and working together and acting out as adversaries in a competitive but friendly atmosphere, such occasions provide opportunities to not only observe the use of new equipment and gadgetry and methods but they also provide opportunities to learn from and improve each other's performance. Besides, such close encounters build understanding and appreciation of each other's capabilities.

Much in the news in December 2007 was the joint Indo-China military exercise carried out by 100 selected crack Indian Special Force members on Chinese soil with Chinese troops. Nothing more has been reported in the media. Both sides, required to perform on high altitude borders as a matter of course would have exhibited their skills and knowledge and picked up the subtle nuances of a foreign unit in operation never to be learned otherwise. Such an exchange has not been envisaged between India and Pakistan.

The Role of the Navy: India's vast land mass is ringed by a 7,562 km long coastline served by several (9) major ports or harbours and more than 100 ports. India's territories in terms of far distant islands in the Bay of Bengal and the Arabian Sea and India's assets like the offshore oil wells, her international maritime boundaries reaching as far as Indonesia and Thailand and as near as Myanmar, Sri Lanka and Pakistan necessitate a Navy that is able to protect India's territories, its economic interests and prevent or repel any attack from the seas. From the first initial unit of the Honourable East India Company's Marine Force which was officially instituted in 1612, the Navy in India went through phases of being named the Bombay Marine, the Royal Indian Marine during World War I and the Royal Indian Navy during World War II. At the time of the latter, its vessel strength was 117 and it took part in operations in the Persian Gulf, Red Sea and Burma (Raj Kumar, 2004, pp. 312−313). The prefix 'Royal' was deleted after India's independence in 1947 and attaining the status of a republic thereafter.

The Indian Navy's role is to safeguard the maritime interests of India and planning and executing combat operations. Apart from establishing supremacy in its role of providing maritime safety, its responsibilities also include keeping trade routes open, denying the use of trade routes to the enemy during hostilities, thus cutting off the latter's supply lines, provide safety to merchant shipping ferrying oil, armaments and ammunition, and launch counter attacks on enemy ships, submarines and aircrafts. More recently its role has been extended to patrolling to prevent piracy on the high seas.

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The navy maintains air and electronic surveillance, patrols the surface along shipping routes, transports and lands the ground troops of the army through amphibious maneuvers, and supports them till they are fully and independently established. Their role of search and rescue (SAR) at sea, both in peace and war, involve answering distress calls from small crafts. It came into prominence during the Tsunami disaster in December 2005. Here, the Indian Navy played a key role in assisting the civil authorities in rescue operations. At other times, it has rendered assistance by being actively helpful in rescuing stranded people during floods which periodically afflict several regions of the country and carries out evacuation of Indian civilians from war afflicted countries as happened recently in Lebanon and from pirate hijacked merchant shipping in Somali waters during November 2008. Among its many maritime related technical responsibilities, the navy carries out hydrographic surveys of the Indian waters and publishes almanacs and tide-tables for various ports (Rajkumar, 2004, p. 314).

Strength and organisation: A 2009 estimate (Jasbir Singh, 2009) of the strength of the Indian Navy (Table 7.2) puts a figure of 55,000 including 7000 naval aviation, 1200 marines and 2,000 women.

There are four principle commands − Western, Eastern, Southern and Andaman and Nicobar (under joint command) in Mumbai, Visakhapatnam and Cochin respectively and two sub-commands (submarine and naval air) with 9 bases, 2 fleets and 16 submarines in the Indian Navy. It also has principal surface combatants, one aircraft carrier, 8 destroyers and 15 frigates. Besides these, there are patrol coastal combatants, naval aviation crafts as well as many other support craft and personnel.

Coast Guard: The Coast Guard now falls under the Navy's ambit. The Coast Guard ship 'Sagar', one among the marine fighters is equipped with a super gun to enhance its capabilities in patrolling the coastal waters. It has 8,000 strong personnel, 50 shore patrol and coastal boats, 24 transport aircraft and 17 helicopters.

Challenges: There have been plenty of maritime challenges in all Indian waters, from the Liberation Tigers of Tamil Elam off the Rameswaram coast (until their recent defeat), and from smugglers landing contraband, straying fishermen and terrorists in Gujarat and Kutch zones. These waters are patrolled by the Navy and Coast Guard.

An indigenously built warship, INS Kolkata, belonging to the destroyer class, was recently launched from the Mazagon Dock in Mumbai. This new, complex and multi-role destroyer is reported to be the largest and the most lethal combination of stealth and strength. It can operate two multi-role helicopters and is fitted with advanced weapons, sensors and integration system (*The Hindu*, April 1, 2006). It has the supersonic BrahMos missiles. The soon to be obtained Barak missile system, originally developed for the Israeli Navy and presently installed and operated successfully in the warships of several navies, is meant for the defense of naval vessels against anti-ship threats which include aircraft, missiles, smart weapons and unmanned aerial vehicles. A highly advanced system, it is the ship borne anti-missile – missile point defense system as well as an anti-air, anti-surface gunnery control system. According to one media report, its flexible modular architecture allows tailoring according to the size of the warship (*Deccan Herald*, October. 13, 2006).

The Indian Navy has plans afoot to expand both vessel wise and capability wise. It currently has 49 ships, 16 submarines and 142 aircraft – including helicopters, combat aircraft, anti submarine but desires to augment the fleet strength by acquiring 32 new ships. The aircraft carrier 'Admiral Gorshkov' purchased from Russia is currently being refitted to suit the Navy's specific requirements

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and is expected to be delivered in a few years. The Navy also plans to lease a nuclear powered submarine from Russia as well as procure new long range reconnaissance planes which can be used over the vast stretches of the west coast of Africa to Southeast Africa and Australia. Their sea harrier fighter strength is said to be depleting, which needs alternatives such as the naval version of the LCA. Their Sea King helicopters also require upgradation (*Deccan Herald*, December 9, 2007). A recent addition is the nuclear powered submarine INS *Arihant.*

Joint exercises by the Navy: The Indian Navy is also assiduously honing its man power skills. In 2006 alone, two exercises were undertaken in Indian waters. The first of these was in April, when both India's and France's navies, supported by their air forces, went on week long manoeuvres involving their aircraft carriers (Varuna II and 'Charles de Gaulle' respectively), and their destroyers and submarines off the coast of Goa. The purpose of the war games was that 'the defence forces of the two countries should know each other for any future emergencies' and to be absolutely certain of 'their inter-operability', meaning either familiarity with drills and procedures or agreeing to certain procedures under given circumstances (*The Hindu*, April 3, 2006).

In October 2006, the Indian and US navies practiced expeditionary manoeuvres off the Konkan coast and carried out a simulated joint semi-urban counter-terrorism exercise in Belgaum, Karnataka. They also carried out anti-submarine operations, maritime interdictions, weapons firings, visit-board search and seizure operations, dissimilar air combat, cross-deck flying and simulated war-at-sea. Joining the US marines in the semi-urban exercises in Belgaum were the infantry from the 21 Battalion of the Punjab Regiment under code name 'Shatrujeet' 06 (victory over enemy) who worked together in intelligence sharing, communications and weapons and equipment usage.

Practicing war in simulated conditions is important as part of training exercises and war readiness. The war games that each branch of the forces engage in are dictated by the kind of response each is expected to provide. Indo-US interactions in this area materialised as four previously conducted war games in the nature of practicing for war or *Yudh Abhyas* in wooded mountains. Special Forces from both sides participated in para drops and mock assaults (*The Hindu*, October 27, 2006).

The Role of the Air Force: The Indian Air Force celebrated 76 years of its existence in 2006. Indian pilots have made a name for themselves in the air battles of World War I, even as aviation itself was in its infancy. This led to a reluctant formation of an Air Force, manned with Indian officers in 1933. Their first operational test came in 1937 against Waziri and Afridi tribes in the North West Frontier Province. They flew Lysanders, Hurricanes and Spitfires in the Second World War. They were deployed not only in NWFP but also against the Japanese in Burma.

At the time of partition, India inherited six and a half squadrons but most of the Air Force's permanent stations became a part of Pakistan. In the immediate aftermath of partition, the Air Force went into action to save Srinagar in the very first war between India and Pakistan over Kashmir in 1947 (Rajkumar, 2004, pp. 324–325). As there were no bomber aircraft, it is reported that the bombs were rolled out by hand over target positions. Today, the Indian Air Force possesses modern aircrafts as well as very sophisticated and advanced support systems.

The Kargil Review Committee Report (Subramaniam, 1999, p. 442) reiterated the chief role of the Indian Air Force as being the protection of the Indian State against threats from hostile Air Forces, which includes the detection of hostile or unfriendly aircraft, counter air operations, achieving air superiority or favourable air station over a designated region or area to allow freedom of action to land forces and air defense of vital assets. The Indian Air Force simultaneously provides support

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to land battles by destroying enemy tanks, defense positions, enemy's logistic infrastructure and targets, especially if they are beyond reach of artillery.

The Air Force, had it been deployed in the 1962 Indo-China border war, would easily have helped India win according to Air Vice Marshal Tewary – by rapidly stemming the Chinese advance, 'neutralise its military successes' and by running interference with the Chinese supply lines which were stretched thin. Not having proper assessment of the opponent's strength, it was feared that the Chinese Air Force might bomb Indian cities in retaliation. India went to the US asking for 12 squadrons of star fighters F-104 and 4 squadrons of B-47 bombers without consulting the Indian Air Force as reported in The Hindu (October 6, 2006). Therefore, one must realise the enormous military strength and strategic advantages of deploying the Air Force at the right time. Kargil gained definite advantages because of this very approach and the Air Force won accolades from the former Chief of Army, General V.P. Malik for its role (Malik, 2006).

The Indian Air Force has five major roles − strike missions, close support for the Army, air lift and strategic and tactical reconnaissance (Rajkumar, 2004, p. 326). It also participates in humanitarian services and goodwill missions air lifting huge amounts of supplies as it did in the aftermath of an earthquake in Islamabad (December, 2005), in relief-rescue operations in Indonesia (June, 2006), in Maharashtra, Gujarat, Andhra, Chattisgarh, MP and Rajasthan (*Deccan Herald*, October 8, 2006).

Structure and organisation: There are five air commands located in different zones: Western Air Command (New Delhi), South Western Air Command (Jodhpur, Rajasthan), Eastern Air Command (Shillong, Meghalaya), Central Air Command (Allahabad, UP) and Southern Air Command (Trivandrum, Kerala). There are several squadrons in the Air Force fighter ground attack, fighter squadrons, for transport purposes, several helicopter squadrons and other crafts for miscellaneous use (Jasbir Singh, 2007). In addition, there are two support commands, Maintenance Command at Nagpur and a Training Command in Bangalore (Table 7.2).

The Indian Air Force's strength is 125,000 with another 140,000 personnel as reserves as shown in the Indian Defence Book 2009, (Jasbir Singh, 2009, p. 223). The force is broadly divided into three categories: (i) administration, (ii) logistics and training and (iii) flying branch. Operationally, the force is divided into five operational and two functional commands. These can again be categorised under air defense, strike, training, reconnaissance, transport and helicopters.

In 2004 (Jasbir Singh, 2004), there were said to be 701 combat aircrafts, in 2009 there are 565. 22 (now 20) armed helicopters, 30 (now 33) squadrons of fighters – MIGs, Mirages and Jaguars for ground attack, 9 fighter squadrons of MIGs, all with electronic counter measures and electronic intel, 12 squadrons of transport craft, 19 squadrons of helicopters, 2 squadrons each of attack helicopters and reconnaissance craft, training squadrons and VIP flight squadron as well as two unmanned aerial vehicles. Though the acquisition of 126 multi-role combat aircraft has been mentioned, there was little development till 2006. There are also missiles such as ASM – Prithvi, Kerry, AAM and SAMs.

The new face of the IAF: The most recent additions to the Indian Air Force are the Russian made Sukhoi-30 MKI deep penetration fighter bombers. The Su-30 MK multi-purpose fighters can carry long, medium and short range missiles for close fighting as well as accommodate anti-radar missiles, TV-guided missiles and other such precision weapons. The aircraft is a long range interceptor and has a range of 3,000 km extended to 5,000 km with built-in fuel tanks and with in flight re-fuelling features. The first new-generation multi-role Su-30 MK in the Air Force can be used for long range patrolling, tracking and what is called 'radar loitering', and training high accuracy weapons etc.

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The custom made multi-role Su-30 MK plane for India is labeled Su-30 MKI (Rajkumar, 2004, pp. 335–337).

Mid-air refuelling is said to be 'a big force multiplier' for enhancing the range and endurance of the existing fighter fleet of the IAF. The Su-30 was a collaborative venture between India, Russia, France, South Africa and Israel, but the integration of the system was done in Russia.

To further enhance air defense capabilities, the indigenously developed Akash system and the Indo-Russia jointly developed BrahMos missile will be integrated with the Sukhois. (*Deccan Herald*, June 6, 2006). Eighteen new Su-30 MKI planes will replace the used Su-30 K. The used Su-30 K are said to have exhausted their pre-overhaul flight limit of 1500 hours flying and will be taken back to Russia at a price of $12 million per aircraft (*The Hindu*, April 13, 2007). At the same time, the upgradation of MIG-29 and Mirage-2000 fighters was going to be done in order to retain India's cutting edge air capabilities (*The Hindu*, April 10, 2007).

The IAF's new plans include some major ambitions – global combat reach, exploit space assets for military purposes even as it plans to retire the last of the MIG-25 planes, which is one of the two planes in the world that has the capability to fly at stratospheric levels to take reconnaissance photographs of good quality (*The Hindu*, April 7, 2007).

Joint exercises: Army, Navy and the Air Force regularly conduct and take part in joint exercises with foreign countries' forces. The joint exercises are also a part of global reach to learn, understand and benefit from the multi-lateral exercises because each country has different tactics, languages and processes (*The Hindu*, April 7, 2007). Such joint exercises can be likened to the periodic 'in house' and international intellectual seminars and scientific and practical workshops conducted by academic and scientific research organisations which serve as the means to learn about novel ideas, advanced techniques, innovative approaches and developments emerging in various countries, and meet and interact with the people associated with such activities.

In October 2006, the Indian Air Force and the Royal Air Force took part in the first ever joint exercise in 43 years (the last one being in the 1960s) between India and UK. India, expecting to receive the AWACS – Airborne Warning and Control System, used this exercise to familiarise its pilots and senior officers with the British AWACS (*The Hindu*, October 14, 2006). Ever ready to explore, test, accept and induct new technologies and systems, the first step is to become acquainted with and participate in joint exercises with the force that has it or can show it; it is the best precedent to acquiring.

A new aspect of joint exercises in the Indian Defence forces is to perform manoeuvres jointly with the Army and the Air Force. One such manoeuvre was conducted on March 19, 2008 in the Thar desert at the Pokhran firing range. Code named 'Brazen Chariot', both the forces showcased their combat prowess, engaged their latest array of weapons in a mock (simulated) air-land battle just 75 km away from the Indo-Pakistan border. It was a display to demonstrate the synergy achieved, to themselves and to the world at large. The participants were the Army Southern Command and the Air Force South Western Command. There were reported to be more than 100 foreign observers from 59 countries and more than 37,000 personnel took part in the war games/manoeuvres. The impressive Army showed up with T-90 tanks, SMERCH long range missiles, spy drones, the latest air defense gun systems and fighter jets. The Air Force displayed its might by sending fighters, transport aircrafts, helicopters, SU-30, MiG-21, MiG-27, IL-76, AN-32, Mi-17, Mi-35 aircraft raining down firepower from a variety of weapons. Since these events were reported, other exercises have been carried out by the Army, Navy and the Air Force.

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The paramilitary forces: India's paramilitary forces are of several types and numbered some 944,000 in personnel strength as shown in Table 7.3 (Westhrop, 1991; Bennet, 2001) but an update (Jasbir Singh, 2009) estimates that not only is there an increase in the types but also in force strength. Each type of force has specified tasks allotted to it as shown in the table although increasingly it is found that the Army is being brought in to assist with state and internal law and order situations and to deal with insurgency.

Table 7.3: Indian paramilitary forces – strength and function

Force	*Strength*	*Tasks*
NSG (National Security Guard)	7357 (5,000)	Anti-terrorism
CRPF (Central Railway Protection Force)	229,699 (90,000 regular)	Internal security
BSF (Border Security Force)	208,000 (250,000 reserve)	Border patrol, deserts
Assam Rifles	63,000 (40,000)	Border patrol, NE, and Myanmar border
Ladakh Scouts	(5,000)	
ITBP (Indo-Tibetan Border Police)	36,324 (141,000)	Policing India-China border
Special Frontier Force	10,000 (8,000)	Border security
CISF (Central Industrial Security Force)	94,000 (70,000)	Security of government/major installations, VIP protection
Defence Security Force	31,000 (30,000)	Security of defence installations
RPF (Railway Protection Force)	70,000 (70,000)	Railway protection
PAC (Provincial Armed Constabulary or State Armed Constabulary)	450,000 (250,000)	Policing
SPG Special Protection Group	3000	VVIP Security
Rashtriya Rifles	60,000	Security in Jammu and Kashmir
Sashatra Seema Bal/Seema Suraksha Bal	31,554	Border policing and security
Civil Defence reservists	500,000	Trained for towns, cities (several states), also for NBC
Home Guards	487821	

Source: Indian Defence Year Book, 2009. Data complied from Westhrop, (1991) showing some changes that have taken place in the last two decades.

The task with the Indian paramilitary and the central police forces is perhaps more broad and wide, encompassing not just internal security but also to patrol, guard and protect our vast borders in the west, northwest, north and northeast. These specially formed forces, like the Rashtriya Rifles, deal with terrorist infiltration such as from Pakistan. In the central police forces, we have three border guarding forces − Assam Rifles (AR), the Border Security Force (BSF) which is also known as the *Seema Suraksha Bal* (SSB), the Indo-Tibetan Border Police (ITBP) as well as Special Service Bureau (SSB).

Further, we have the Central Reserve Police Force (CRPF) which acts as the main assault force to assist in law and order, the National Security Guard (NSG) which acts in specialised form of counter terrorism and anti-hijacking operations, and a Rapid Action Force (RAF) which is a specialised wing of the CRPF dealing with riots and communal disturbances. The Assam Rifles falls under the operational control of the Army even though it has the primary duty of guarding borders in the Northeastern region. Another very important and essential functional organ of the Government of

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India is the Border Roads Organization (BRO) which has been engaged in building and maintaining well laid and all weather roads, a lifeline linking important and distant sectors in the northern belt of India. Without its active role in maintaining the infrastructure of the roads, all supply and transport links could be imperiled, access to national highways and mountain strongholds, surface link in the Kashmir valley and the rest of the country cut off. BRO is also rendering yeoman service in Afghanistan and Iran (Jasbir Singh, 2004, p. 371).

One may now gauge the strength, spread and reach of our Defence forces within the country, the varied duties they perform, the massive deployment of the number of personnel necessary in each region at any given time, but mostly simultaneously in all places and wonder how the entire force is made to function like clockwork. Necessarily therefore, the Indian forces must remain highly motivated, well trained and disciplined, well armed and well supported in every respect.

Force Strength – India's Neighbours

We have neighbours whose borders march with ours and with whom we are in continuous engagement of one kind or another. Hence, their force strengths matter to India. In comparison to India, the total active military manpower of China, whose People's Liberation Army is 80 years old now (Aiyar, 2007), is estimated to be 2,274,000 (being reduced now) in which the Army strength is 1,600,000, the Air Force's 250,000 and the Navy's 255,000 (Table 7.4). There are some 500 to 600,000 reserves.

Pakistan on the other hand had 620,000 army personnel (with reserve strength of 513,000), 25,000 navy personnel (naval air and marines numbering 1,200 and maritime security agency numbering 2000) and its air force has 45,000 personnel and Bennet's figures also showed (Bennet, 2001, p. 141) that there were 550,000 personnel on its active strength with 400,000 available for combat units. Table 7.4 presents, more recent figures. Unlike the Indian Army, the Pakistan Army plays a political role even as its main focus rests on organising and arming itself for border war situations. Pakistan's paramilitary forces are 294,000 strong, whose primary task of course is to maintain internal security.

Table 7.4 : Comparative strength of the armed forces of India, Pakistan and China

		India	*China*	*Pakistan*
Total				
Active		1,288,000	2,270,000*	NA
Army:	Active	1,100,000	1,600,000	550,000
	Reserve	3,00,000 + 500,000	50,000–600,000	5,13,000 ++
Territorial Army		46,000	NA	NA
Navy		55,000	2,55,000 + 10,000	24,000
		19 submarines	marines + Naval aviation	10 submarines
		Surface 26 combatants	26,000	6 surface combatants
			62 submarines	
			75 surface combatants	
Air Force		1,25,000	250,000	45,000
		565 combat aircraft	19,00 + combat aircraft	360 combat aircraft
Paramilitary Forces		1,300,586	294,000**	304,000

*NA = Data not available

Source: Indian Defence Year Book, 2009. Data for * and ** from Westhorpe, 1991. Data for ++ from Indian Defence year book 2008

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Pakistan's Army, Organisation and Command Structure

The organization of the modern Pakistan Army is similar to that in India, and equally manpower intensive.

There is one Chief of the General Staff and one Vice-Chief or Deputy Chief (when appointed). There are seven branches under the Chief of General Staff which are named: General Staff Branch (Br. for Branch), Adjutant General Br., Military Secretary Br., Master General of Ordinance, Inspector General Training and Evaluation, Quarter Master General (QMG) Br. and Judge Advocate General (JAG) Br. Under the General Staff Br. fall the three Directorates of Arms and Services. There are nine Corps numbered 1, 2, 4, 5, 10, 11, 12, 30 and 31 and presently all are controlled and commanded by GHQ, Rawalpindi. These nine corps consist of 21 divisions. The army is said to be well balanced and capable of quickly regrouping along the northern border and Siachen sector to meet any threat (Cloughley, 1998, pp. 342–343).

One important and noteworthy item of the Pakistan Army is that ammunition for many weapons in its armoury can be produced by Pakistan Ordinance factories, which makes the hundreds of thousands of rounds of firing definitely cheaper than it is in India.

Under the Constitution of Pakistan, the role of the Armed Forces was defined as 'to defend, under the direction of the Federal Government, Pakistan, against external aggression or threat of war and subject to law and act in aid of the civil power when called upon to do so'. It also provides that the validity of any direction issued by the Federal Government under clause (1) shall not be called into question by any court (Cloughley, 1999, p. 373).

These provisions apparently were not considered to be adequate by the powers and thus, by 1998, an ordinance was signed to legalise pretty harsh and draconian measures to try and punish any offenses deemed to be illegal such as strikes, lock-outs, destruction of state property, creating civil commotion etc.

Force strength: During the partition, the British Indian Army was split and one-third of the share came to Pakistan. According to the 2007 data (Jasbir Singh, 2007, pp. 258–263), Pakistan's force strength is made up of 1.2 million personnel including 513,000 reserves in the three branches. The Pakistan Armed Forces personnel and combat strength in the Army, Navy and Air Force are summarised in Table 7.5.

Pakistan's long land borders with India, the confluent coastline on the Western seaboard and until 1971, the East Pakistan Coast, have required deployment of its forces. There have been three border wars with India since independence. The continuous engagements in the Siachen sector since 1984 and in the region of Line of Control (LOC) in Jammu and Kashmir, together with the fight against terrorist Taliban elements on the Northern and Western borders and an incessant flux in the Baluch region would necessitate the deployment of forces in the length and breadth of the country. When such numbers are actively deployed in scattered locations, the question of their support logistics comes into prominence.

Nothing noteworthy or specific is known about Pakistan's logistics aspects but since after Partition, much progress has been made in modernising the Armed Forces and in equipping them with new types of weaponry and missiles, armoured vehicles, ships, and modern fighter and transport aircrafts. It can be assumed that much progress would have been achieved in the support systems as well and that there must be an efficient system in place for support logistics. In the 1950s, Pakistan (West and East combined) was reported by a nutrition survey group of the NIH, USA, to have 7000 miles of railroads. A good railway transportation system between the major cities and well laid roads nearly

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Table 7.5: Strength of Pakistan's Armed Forces

Army	Air force	Navy
Strength *Personnel* – 5,50,000 *Reserves* – 5,13,000	*Personnel* – 45,000	*Personnel* – 24,000 (Naval Air, Marines 1400, Maritime Security Agency 2000)
Paramilitary forces – 294,000 (National Guard, Janbaaz force, Mujahid force, NCC, Coast Guard, Northern Light Infantry, Frontier Corps, Rangers, Maritime Security Agency		
Organisation		
9 corps HQ	3 Regional Commands 11 Major Air Bases	5 commands, 3 Bases major base at Karachi,
2 Armoured divisions (div) 18 infantry div, 1 command area div, 36 brigades armoured artillery, machanized, engineer, Recon regiments 1 Special Forces group of 3 battalions and 16 Aviation sqdrs	415 combat aircrafts 5 Fighter Ground Attack Squadrons 10 Fighter Squadrons 1 Recon Squadron 1 Training sqdr 7 Search and Rescue helicopter sqdr 25 Transport aircraft 184 Training aircrafts 15 Helicopers -Utility	8 submarines 6 frigates at surface combatants. 6 patrol and coastal combatants, 4 Missile craft 3 coastal patrol 11 inshore patrol 3 Mine Counter Measures 9 Support and Miscellaneous **Coast Guard** 28 boats and crafts **Naval Air** 17 combat Aircraft 18 Helicopters 1 Anti submarine squadron plus transport aircraft, and search and rescue anti submarine helicopters etc.
Weapon systems – 2461 main battle tanks MBT SSM, ASM, SAM, AAM	SAM and Different types of Missiles (ASM, AAM, SAM)	Not specified

Source: Jasbir Singh, Indian Defence Year Book, 2009.

58,000 miles long as well as 2,650 miles of navigable waterways (in East Pakistan) were ample to move men, materials and stores. Passenger air connectivity was already in operation as noted by a group of American scientists who were there on a NIH project (National Institutes of Health, USA, 1959) to carry out nutritional evaluation of Pakistani soldiers.

Special Forces: Pakistan's Special Service Group (SSG) is an elite commando unit created in 1954 as 19th Battalion Baluch Regiment. Since 1964, it has been enlarged to 24 companies, each having specialised units for operations in deserts, mountain ranges, underwater warfare and intelligence gathering, all done with the assistance of US Army training teams.

The Musa company was added in 1970, originally as a combat swimmer unit but now a dedicated anti-terrorist unit. The personnel are skilled in heliborne insertion, combat shooting, and parachute techniques of both HAHO and HALO kind. The unit is variously equipped with weapons to be used

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in any situation. SSG was deployed in deep penetration operations in strategic locations in India within disputed areas of Kashmir, against LTTE in Sri Lanka and for covert missions in Afghanistan. SSG plays a role as air marshals in VIP flights and in hostage rescue in air hijack and providing high level security for nuclear research facilities.

The 3rd Commando Battalion of the Special Forces was deployed in 'Operation Search Light' to suppress the political and civil unrest in East Pakistan beginning with the search and capture of Sheikh Mujibur Rahman, the Leader of the Awami League.

China's Force Strength

According to Bennet (2001), even though China currently does not possess adequately trained personnel, specialist weapons and technology expertise support, plans are afoot for the next five years to raise increased numbers of Special Forces. The counter terrorist units known as Immediate Action Units are controlled by State Police, with personnel from special OPS units, trained and equipped by the army. The Long Range Operations group formed in 1999 for airborne reconnaissance and amphibious warfare, located in Southern China, is known by the name 'Sword of Southern China'. A brigade-sized unit and more superiorly equipped group, it is staffed with mostly college-educated and staff college trained officers unlike the shambling mass of soldiers. Their duties pertain to counter insurgency operations and terrorism, and tackle religious and ethnic unrest in interior China.

Electronic warfare is another facet of Special Operations of the Chinese army involving intelligence gathering, close range signal interception and jamming. In close approach missions, electronic signal blocking is carried out so that targets as close as 550 yards suffer tremendous signal losses.

While every army aspiring to raise its standards and achieve a high state of modernisation wishes to posses such electronic warfare groups, China is the one listed by Bennet to have such a group among our three neighbours.

The Wars

While the Indian Army's dedicated mountain divisions face Pakistan and China in the bitterly freezing cold mountains of Kashmir, Ladakh and the Northeast, the armoured and mechanised divisions stay ready for tank battles in the dry hot deserts of Rajasthan. Meanwhile, the special forces' jungle warfare-trained infantry brigades carry on counter insurgency engagements in the hills, dense valleys and jungles of Assam and Nagaland.

There have been notable battle engagements between India and Pakistan ever since they attained independence. The October 1947 Kashmir War was precipitated because of disputed borders. It was sudden, unexpected, bloody and bitter. At the time of ceasefire in 1948–49, the eastern portions of Jammu and Kashmir were held by India and the Western Azad-e-Kashmir portion was held by Pakistan. A portion in northern Kashmir known as Aksai Chin came to be held by China. The Lahore-Punjab border witnessed major armoured battles in 1948 and after that again in 1965 and 1971, the latter leading to the defeat of the Pakistani Army and the creation of Bangladesh. Since 1984, there has been a continuous force deployment in the Siachen sector and a war in Kargil heights. An uneasy truce of sorts exists all around. The northeastern regions with porous borders with Bangladesh, China and Myanmar are threatened constantly with infiltrations, insurrections, militants and terrorists of various hues. The weather conditions are very bad if not outright hostile in some places, infrastructure and connectivity is lacking in other areas, and local food production

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is quite insufficient to feed even the local inhabitants. Therefore, massive efforts are required to coax anything out of the soil and to transport foodstuffs and supplies over long and treacherous terrain. Although the guns on Siachen and on the China border are silent now, there are constant encounters, often mortal combat between the army or the paramilitary forces on one side and insurgents and terrorists on the other.

Recruitment to the Modern Indian Armed Forces

The East India Company hired sepoys for guard duty and for the protection of its property. These men were ragged looking, pathetic and ill-disciplined, more like bandits (Woodward, 1978, p. 119). The three efficient Presidency Armies – Bombay, Madras and Bengal which had been formally incorporated by 1750 under the leadership of Robert Clive and his Commander-in-Chief General Stringer Lawrence, also recruited the so called 'other' upper caste Hindus and the sepoys' strength was far greater than the British strength.

The reason that made the men join the army was that it offered good money for that time; it was a place that, in the minds of the village people, offered work with honour, gave them importance in the eyes of the others as well as prestige and position. Their entry in large numbers into the Bengal Army can only be explained on the assumption that they considered it to be a special honour and privilege. Reminiscences of an old hand Subedar Sitaram Pandey of the British Army confirm these facts and sentiments (Lunt, 1970).

There is no conscription in India. Service in the Defence Forces is voluntary and every citizen of India above the age of 16 years is eligible to seek enrollment subject to certain provisions. There is no compulsory National Service (military) in India as it exists in Israel, Switzerland, Singapore, Finland, and Taiwan. The Chief of Army Staff expressed his opinion on January 14, 2007, (Editorial, *Deccan Herald*, January 17, 2007) that it may become necessary to overcome the serious shortage of military manpower. Every year, some 60,000 personnel of different ranks are said to retire from the services. These people could be as young as 28−29. Several thousands are needed rather desperately to keep the force strength up. Presently, the forces are said to be short of some 14,000 officers. The General does not include women in his statement. In Israel, women are obliged to do military service but in other countries such as United States and UK, it is voluntary for all. The United States and Australia did have compulsory military service during the Vietnam period.

The personnel recruited into the Indian Defence forces come from all the states in the country unlike in the past. In the time before independence till at least the time of re-structuring of the armed forces, only certain ethnic groups were chosen preferentially for specific branches of the services or regiments as a hangover from the feudal and British colonial times (Westhorpe, 1991). This did not happen until the governance of India passed from the hands of the East India Company to the Crown after the 1857 war. People from all strata and walks of life elected to join the army for various reasons, most because of the promised pay and pension. Joining was not an arduous job either and there were no great selection criteria applied in India or Britain.

Today, in a highly competitive environment, it is no longer possible for one to walk into the Armed Forces, nor is it any easier to clear the tests administered for physical, educational, and psychological assessment. The armed forces depend increasingly on technology, on high level of inherent abilities and on skills acquired by training individuals who have attained a basic level of education at the time of joining. Dunnigan (1982) observed that from World War studies it was found that the most

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effective infantryman was a man with average intelligence or above, with good mechanical skills, and the kind of person most wanted in the artillery or to run a tank. He also said that with stupid and inept recruits, a good infantry could not be had. Even to cook, the recruits need to have had some basic level of education from where the excellent training imparted to them will make them either into top class chefs or just run of the mill every day *langar* cooks.

Young men and women opt to make a career by joining the Armed Forces in various capacities. All the three services – the Army, the Navy and the Air Force periodically call for enlistments in both non-technical and technical streams.

No officer may find his way into a commission irrespective of what his lineage or affiliation is unlike in the British times. Officers and cadres must go through examinations and a rigorous selection process. For the officer cadre, the Union Public Service Commission's selection procedures apply by way of the UPSC's Combined Defence Services (CDS) Examination, which is conducted twice every year. Only graduates are eligible to apply. There is a need for people with all kinds of specialties from lawyers and doctors to all branches of engineers, languages, sciences and computer and information technology specialists. Those seeking admission should be between the ages 17 and 23 years and should be unmarried.

For enrollment to the Army ranks, periodic rallies are conducted in different districts after due advance publicity is given via newspapers. The eligibility criteria are based on age, educational qualifications and physical fitness and men may then appear in person and go through the selection procedures on the spot. For the Navy and Air Force, where the required qualifications are technical in nature, there are calls for applications published in national newspapers. The candidates may then apply on paper by providing the information requested. No application forms are issued and no agency for recruitment is appointed. Thus, all recruitment is directly conducted by the three services (*Deccan Herald*, May 2, 2007). In the Air Force, there are career prospects for candidates between 16 years to 23 years in the Flying branch with 10+2 education and any graduatation with Physics and Mathematics. In each service, there are age-related weight, height and fitness criteria. In general terms, fitness requirements consist of a 1.6 km run to be completed in 7 minutes, 25 squat ups and 10 pushups.[2] Medical standards include a minimum height of 157 cm and correlated weight, and proportionate chest expansion of 5 cm, good medical and physical health, free from disease and disability of any kind, no cardiac, dental, ear, psychiatric and neurological conditions and possessing colour perception at CPII. There are visual standards of 6/6 or no worse than 6/9.

Training in manners and etiquette: While drill and basic military training is all that is imparted to the fresh recruits in the soldier category, things are quite different with the officer cadets. They are made to go through the process of unlearning and discarding their mannerisms and attitudes to life, emulate gentelemanly behaviour towards each other, cultivate courtesy and politeness in general and towards women in particular. While it has been rather easy for men to adopt quickly to the western style of dressing, eating and socialising and while some are inherently mannerly, others baulk at having to 'climb down', so to say, by showing gallantry towards women and particularly outside of the Service environment.

In a guide to customs and services in India, the author of an instruction booklet for the officers (Kapur, 1988) describes the do's and dont's about the customs and dress code for the mess. They learn western style table etiquette and are told to give precedence to the president of the mess in sit down dining and wait for the senior most to be served first and that service would proceed clockwise.

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Women's recruitment into the Forces: Joining the Armed Services is a calling for some and a platform for a good career for others. In Vedic India, though wielding weapons and receiving military training of sorts, women did not participate in wars. Non-Aryan women joined the profession of arms in large numbers because men did not regard it as ungallant to war with women. In fourth century BC India, Greek accounts describe women as being active in war in some states in the Northwest (Thapliyal, 2002c, p. 93). However, at the present time in India, women are never taken into the combat arm; they can only join in a technical capacity in the support branches. There are women in medical services, in ASC, perhaps in JAG and other non-combatant areas. No women are posted on a ship; the Navy while training them for a variety of technical and non technical responsibilities restricts the women's compliment to shore postings. The Air Force, which is also a highly technical branch provides more scope for women with technical qualifications. Crucial ground duties apart, since 1992 women have also found entry into the flying arena. They are allowed to fly only transport aircrafts. The Air Force offers training to graduates in many areas – flying, technical training, security training, meteorology training and of course medical training. Applications are vigorously scrutinised and meritorious candidates are called to appear before the Service Selection Board. The shortlisted candidates are put through vigorous training at one of the Air Force training establishments (*Deccan Herald*, May 3, 2007). Women are appointed only on a short service commission of five years, which may be extended to ten years or more.

The fate of women aspirants to the Armed Forces at present seems to be uncertain with the recent report that the Defence Council does not view their presence favourably in any capacity in any branch let alone the combat branches, the reason being that women are said to be most vulnerable to various atrocities if taken captive in active combat zones. In other capacities, their unsuitability is being highlighted saying that they expect, ask and demand preferential treatment in their work and postings, that they are very stress prone and complain of gender bias, that their marriage and family commitments come in the way of discharging their duties.

This subject has been contentious. There are those who are totally opposed to the idea of women in the forces like the former Vice-Chief of Army, Lt. Gen. S. Pattabhiraman who said as much in 2006. There are others who feel that the women are useful to have in certain disciplines and only in non-combatant positions, and not in others such as infantry and combat duties, or in ships, submarines and in diving, and only as pilots flying transport aircrafts and helicopters. Except for these bars, women are recruited to serve in the Army, Navy and the Air Force. Since 1992, women have been inducted into the three Services in other than medical fields (Jasbir Singh, 2007). The highest ranking woman officer in the forces Lt. Gen. Puneeta Arora is a medical doctor who defended categorically the stand of the Armed Forces saying that there was no gender based discrimination in the Services and that women did not necessarily have to wear the combat fatigues because there were plenty of other avenues open for them in the Forces. More girls are opting for commercial pilot training because of the job opportunities in India and elsewhere. There are women only in the officer cadres, not in the ranks. As such, each one is a qualified graduate in Law or Sciences or Humanities and other professional courses such as engineering, medicine, nursing, management, computer science and technology and applications. There is no woman in any of the musical bands of the Services! It is wholly staffed, played and conducted by men. For the present the women are non combatants and there they are likely to remain for quite sometime. The recent news that women constables would be posted to the India-Pakistan border in the BSF may lead to changes in other areas too.

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At present, women constitute only a very small fraction of the Indian Armed Forces, the maximum percentage being employed in the Navy (5.4 per cent), although in actual numbers, Navy has 703 and the Army more than 900 (2.56 per cent). In the Air Force, in technical capacity and as pilots, there are 225 women (2.8 per cent). In comparison, the figures for some other countries are quite high. As per the Indian Defence Year Book (Jasbir Singh, 2007), Israel has employed women and welcomed them into the Armed Forces and also sent them into combat and treated them on par with men. Women's representation in the Israeli army is 83 per cent where as in the United States of America it is 15 per cent. It had 71,500 women in 2001, 22,000 of whom were deployed for frontline service as pilots and in the capacity of soldiers as privates and sergeants in combat zones. The British and US Armies have women as privates and sergeants; the British Navy has women sailors, one of whom was captured in March 2007 along with a group of 14 sailors by Iran while their ship was believed to have transgressed the territorial waters of Iran. They were all set free later. USA never had a woman President, but India, UK and Israel have had women at the helm of their nation's affairs (Indira Gandhi, Margaret Thatcher and Golda Meir and now Chancellor Angela Merkel of Germany and a woman President of India too). Pakistan and Bangladesh also had women Prime Ministers (the late Benazir Bhutto, Begum Khaleda Zia and Sheikh Hasina) and Sri Lanka had two women Presidents (Mrs. Bandaranaike and Chandrika Ranatunga). But except for Israel, USA and now UK, the rest of the countries baulk at the thought of women cadres in combat zones; no women are mentioned as being members of Pakistan, Sri Lanka and Bangladesh forces.

Pay and emoluments

The pay for the ORs (Other Ranks) during the initial training period is Rs. 4,500/- pm and on completion of training ranges from Rs. 5,300/- pm to Rs. 16,000/- pm depending on rank and years of service. During the entire period of training and thereafter, the technical cadres are given books, reading material, uniform, food and accommodation free of cost. There are many benefits such as Leave Travel Concession for self and dependents, Group Housing Benefits, other privileges, Insurance cover of 750,000 at nominal premium of Rs. 750/- pm, 30 days casual leave and 60 days annual leave as well as one free railway warrant every year. There are benefits for post retirement stage as well.

The pay for officers is commensurate with rank and is the same in the tri services, subject to certain benefits, additional allowances that are associated with nature of work and the area of posting. Officers' salaries in the Armed Forces can be gauged from what the Chief of Army Staff gets − a fixed amount of Rs. 30,000/- (Verma, Hiranandani and Pandey, 2008, p. 62). These are in no way comparable to other civil servants and the corporate sector who receive quite gratifying pay packets and perks beyond an ordinary person's imagination.

More details about recruitment and pay structure may be found in Verma *et. al.* (2008). However in all the Services, both for officers and ORs alike, the entitlements include free rations as per scale, accommodation and services at concessional rates, free medical facilities for family, group housing, concessional travel, canteen facilities and many other such benefits. Officers are also encouraged to take up courses for resettlement and are given study leave etc.

Officers ranks in the three services: Table 7.6 depicts the designation of comparative rank names in the ascending order used in each of the services. The Army is mentioned first since in

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India, the Army is ranked the senior service, and then comes the Navy and then the Air Force, possibly for reasons of strength, operations and areas covered. Earlier, the order of seniority used to be Navy, Army and Air Force.

Table 7. 6: Equivalent ranks of officers in the three Armed Forces

Army	*Navy*	*Air Force*
1. Lieutenant (Lt.)	Sub-Lieutenant (Sub Lt.)	Flight Lieutenant (Fl. Lt.)
2. Captain (Capt.)	Navy Lieutenant (Navy Lt.)	Flight Lieutenant (Fl. Lt.)
3. Major	Lieutenant Commander (Lt. Cdr.)	Squadron Leader (Sqdr. Ldr.)
4. Lieutenant-Colonel (Lt. Col.)	Commander (Cdr.)	Wing-Commander (Wg. Cdr.)
5. Colonel (full) (Col.)	Captain (Capt.)	Group Captain (Grp. Capt.)
6. Brigadier (Brig.)	Commodore (Cmde)	Air-Commodore (Air-cmde)
7. Major-General (Maj.Gen.)	Rear Admiral	Air-ViceMarshal (AVM)
8. Lieutenant-General (Lt.Gen.)	Vice-Admiral	Vice-Marshall
9. General	Admiral	Air-Marshall
10. Chief of Army Staff (COAS)	Chief of Naval Staff (CONS)	Chief of Air Staff (COA)

The junior most rank of an officer is of a lieutenant/sub-lieutenant/flight-lieutenant and the highest is that of a General, Admiral and Air-Marshall respectively. The three Service Chiefs are placed under the Supreme Commander of India who is the President of India.

Recruitment to the Paramilitary Forces: Central Police Forces

The Central Police Forces comprising the Border Security Force (BSF), the Central Reserve Police Force (CRPF), the Central Industrial Security Force (CISF), the Indo-Tibetan Border Police (ITBP) and SSB assist the Central Government in solving complex issues and protect the country from external aggression. Entry into these branches is said to be tough, requiring physical stamina and fitness. There are women in the State's and Indian Police Force and the CISF (Patil, 2006, in a newspaper interview).

The woman contingents of CISF are visible in places of tourist interest, and airports. In 2006, a woman's contingent of the Rapid Action Force was sent as part of the UN Peace Keeping Force to Darfur, Somalia.

In the Central Police Force, there are a few women. We have some prominent and accomplished women IPS officers such as Kiran Bedi and Jija Madhavan Hari Singh. It is a sad commentary that only these names come to mind out of the millions.

Recruitment versus Nutrition Concerns

An average Indian's diet recommendations based on weight, height, age, gender, and physical activity has been calculated by the All India Institute of Medical Sciences, Department of Cardiology (www.foodpyramidindia.org). On a 2,000 to 2,200 Kcal per day pattern and a physical activity of 30–60 minutes, the daily diet recommendations provide for 260 to 280 g of cereals, 60 g pulses, 200 g green leafy vegetables, 300 g of other vegetables, 500 ml milk (full or skim), paneer 30 g, cooking oil 15 to 20 g, nuts from 5–8 g to 15 g and sugar between 25 to 35 g. This pattern is said to provide between 1,990 to 2,190 Kcals of energy, from 321 to 346 g of carbohydrates, 66 g of protein and 46 to 56 g of fat. Paneer is a substitute for 75 g of chicken (for non-vegetarians). The quantities

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indicated for the cereals, pulses, vegetables and meat are on raw basis (www.foodpyramidindia.org). The majority of the soldier ranks derive from rural agricultural families living off their land; they are the not so well to do rural and urban youth belonging to large families and able to get only minimal education. The more educated among them aim for technical cadres. The Navy and the Air Force require more technically-skilled people to carry out various ground duties and on-board jobs. The enlistments come, not necessarily from the socially disadvantaged class but due to economically strained circumstances and generally from those who cannot support further higher education beyond middle and high school and need to find a secure and reasonably well paid job for the qualifications acquired. The youth who flock to the army recruitment camps must possess the physique and physical performance capabilities that will approach the physical standards laid down for the purpose. The socio-economic background of the hopefuls does not support a living standard that will be able to provide nourishing food to the children. The recent nutrition survey of India, according to media reports, has shown that more than 50 per cent of the children in India, both in rural and urban settings suffer from various degrees of malnutrition.

Then there is the question of their educational status. The rural youth number among the maximum middle school dropouts. They are just passably literate at this level. How many hopefuls would be left to clear the class 10 exams and how many among these will pass the required class 12 or pre-university course, given the high failure rates at each level? Mathematics, Physics and Chemistry are not subjects that can be learnt without proper teaching and perhaps coaching. There is yet another hurdle to cross for those aspiring to join the technical cadres and officer class, which is the English language – spoken and written. Education in our country being what it is, there is a serious dearth of reasonably well educated youth with reasonable knowledge levels or technically capable high school and college graduate material who can clear the various levels of testing required to pass the Service Selection Board examinations and interviews for officers.

At an average of about Rs. 30/- per day (Rs. 32.35 for officers and 32.16 for other ranks) spent on the daily authorised rations, the country's exchequer expends approximately Rs. 43,268,000 or Rs. 4.33 crore a day for providing free rations to the active strength of the Armed Forces. This amounts to Rs. 15,792,820,000/- or Rs. 1,579/- crore per year. In the 2007 budget, the Union Government allocated some Rs. 8,000 crore for Defence.

Endnotes

1. The remains of the John Company can be seen in the vestiges of four units in Britain. These are (a) 10 (Assaye) Battery which in 1803 was No. 3 Company, Bombay Artillery, (b) 38 (Seringapatam) Battery which in 1799 was No. 4 Company, Bombay Artillery, (c) 129 (China) Battery, known in 1840 as a C company of 2 Battalion, Madras Artillery and the last (d) 137 (Java) Battery formed in 1778 but qualified for the honour title in 1811 as No. 1 Company, 2 Battalion, Bengal Artillery. Their own arm badges depict elephant (a and d), a tiger (b) and a dragon (c). These Batteries not only survived but made their presence felt by their participation in the 1991 Gulf war. The British legacy in the matter of the two armies is evident in regiments with British origins and bearing British titles whose officers and men still wear the same kind of uniforms and carry the colours as per the British pattern (Gaylor, 1992, p. xi). The legacy is also displayed clearly in the way the regimental centers are maintained.
2. Running, push ups and squat ups are the basic and simple fitness tests administered to recruits for screening. A research report (Parker-Pope, 2008 for *New York Times*) on exercise physiology says that pushups reveal fitness level. To perform pushups, strength and endurance are required. It tests the whole body engaging muscle groups in the arms, legs, abdomen, hips and legs.

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Section – II

Food

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8

Origin of Food Habits, Diets and Beliefs

Evolution and Food Habits

Food consumption is the basic instinct of all living things. The first life on the planet was microbial in nature, emerging and living in the primordial soup that was the ocean, also inhabiting rock, the deep Earth and the soil. They developed mechanisms and metabolic profiles to fit the environment they inhabited. Anaerobic systems and archaebacteria existed without Oxygen. Vegetation and photosynthetic cycle with the oxygen and carbon dioxide exchange mechanisms caused an atmosphere where a variety of fauna grew abundantly, both small and big. The herbivores ate the vegetation while the predators killed the herbivores as well as creatures placed lower in the food chain.

In the evolution of man, that began some six million years ago, from the time of the early hominids until the period of settled living followed by the agricultural revolution, food was what could be hunted or foraged and gathered from the wild (Gore, 2003). In the interim, from around two million years ago during the Pliocene, *Homo habilis* devised tools to hunt but active hunting began with *H. erectus,* which was better endowed with the capability to utilise nature's bounty. Acquisition of the skills of fishing came later sometime between 190,000 and 130,000 years ago in Eastern Africa during the time of major glaciation (Oppenheimer, 2003, pp. 76–77). While *H. habilis* still ranged, modern man appeared. According to some writings, fire was domesticated much earlier, at least 700,000 to 800,000 years ago and with the discovery of fire came the appreciation of cooked meat and adapting a less strenuous way of eating and digesting the same food (Nestle Report). But Oppenheimer makes no mention of this special ability in the hominids of less than a million years ago. Not until 45,000 years ago did the anatomically modern man appear in the near East and Europe (Oppenheimer, 2003, p. 81). The Ice ages had great effect on their food sources, as the vegetation dried up and they were forced to move out of their original land looking for larger animals. The migration of the species had begun.

Pre-agricultural man ate some 200 species of plant foods such as wild grass seeds, tubers, tree nuts as well as many kinds of meat and fish (Cordain, 1999).

The agricultural epoch dawned in the Fertile Crescent in the Middle East and Central Asia. Oases helped in cultivation and irrigation. Excavations in Nabta Playa, now a rainless desert dating back to 12,000 years ago on the Egyptian-Sudan border provide evidence of domestication and exploitation of plants in the Saharan region which can be dated to 8,000 years ago. Starch analysis techniques applied to excavated remains of seeds point to an early transition from foraging to root crop cultivation in Panama's tropical forests (Piperno et al., 2000). History of plant domestication of Southwest Africa reveals that pulses and cereals began to be used intensively in many areas around 12,000 years ago and shortly after domestication varieties of peas, lentils, barley and Emmer wheat came into use. Though some areas still depended on wild grasses, by 8,000 years ago both domesticated wheat and barley had come into general use (Wendorf, 1992). One by one several crops were domesticated and horticulture began to be practiced.

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The First Farmers

It was established from the stone artifacts found in Mount Carmel on the Mediterranean that cereals became an important dietary substance. Pits for storage and for roasting grain have also been discovered in these areas. The cereals in the diet were wild barley and different kinds of naturally occurring wheat. These people were perhaps the earliest of plant breeders in the way they seemed to have practiced generations of selective planting so that more food was produced by 8,000 BC.

Students of agricultural sciences, plant genetics and breeding and biotechnology would know that the wild wheat known as Wild Einkorn (*Triticum boeticum*) and wild goat grass (*Aegilops speltoides* and *A. taushii*), diploids having two sets of chromosome were the original starter specimens which gave rise to the domesticated Emmer wheat (*Triticum monococcum*) with tough ears and certain other hybrids. The wild Emmer wheat (*Triticum dicoccoides*) obtained from back crosses was a tetraploid in nature (four sets of chromosomes) but also possessed tough ears. Further crossings produced Emmer wheat (*T. dicoccum*), the hexaploid (six sets of chromosomes) hard wheat (*T. durum*), spell wheat (*T. spelta*), bread wheat (*T. aestivum*) and club wheat (*T. compactum*). The hard wheat, bread wheat and club wheat were domesticated. These species possessed not only tough ears like their wilder ancestors but also free threshing seeds (Hunter, 2003, pp. 20–21).

The First Shepherding

The earliest people as we know hunted wild animals like the gazelle, boar, deer etc. for food. It is not easy to tell when they took to breeding the animals in different parts of the world. Wolves were domesticated to dogs around 11,000 BC. Mouflons became sheep; aurochs or wild cattle became cows. Gazelle meat along with wild cereals became an established major diet by 9,500 BC. Sheep and goats entered the farming cycle soon after, followed by the domestication of the pig (7,500 BC), cattle, (7,000 BC), cat (7,000 BC), chicken (6,000 BC), llama (5,000 BC), donkey (4,000 BC), horse (4,000 BC), camel (3,000 BC), guinea pigs (2,000 BC), rabbit (1,000 BC) and turkey (300 BC). Much of the domestication happened in the region of West Asia (or Middle East), Central Asia and Arabia. Other places where domestication of animals has been found to have occurred were as diverse as Spain, China, the Andes, Peru, Mexico and Russia (Hunter, 2003, p. 23). Sheep and goats were particularly important in farm economy, for they produced meat, milk, hide, fur or fleece. The settlers thus had grain, meat and milk for food and hide and fleece to clothe and protect them from the severe cold.

Not until 2,000 years ago was any agriculture practiced among the Puma Indians and the Papua New Guinea tribes; it is also significant that there are many peoples who still live as the pre-agriculture man did (Cordain, 1999). Two immediate examples of such a lifestyle may be found among the Australian Aborigines and the Jurawa and Onge tribes in the Andaman and Nicobar islands (Chakrabarty, 1998) all of whom belong to the Australoid group.

Our Palaeo Diet and Basic Foods

It has been determined that while our pre-human ancestors of 3–4 million years ago who lived in the warm wet African forests subsisted mainly on fruits and tree nuts along with animal food in small quantities, the bipedal hominid of two million years ago began to turn carnivorous during the Ice age. This happened because the freeze resulted in the drying up of the planet; more grasslands

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sprung up which supported many herbivores that ranged freely and were easy game for the hunters. As mentioned earlier, *Homo habilis* made stone tools and *Homo erectus* took to active hunting and thus ate large amounts of meat. The Neanderthals who appeared somewhere around 250,000 years ago (*H.neanderthalus*) coexisted with modern *Homo sapiens* in Europe between 28,000 and 40,000 years ago (Oppenheimer, 2003, pp. 104–105) in the region of Germany, France, Russia, the Middle East and Africa. This portion of archaic history is found in France in Chauvet cave engravings, drawings and brilliant paintings (Clottes, 2001). Many bones of large animals have been discovered in the vicinity of early habitation of this species indicating that they had been used for food in the cold climate.

Some 40,000 years ago, the Pima Indians hunted really big game like the Siberian mammoth and their diet was derived entirely from meat with hardly any carbohydrate content except for the seasonal berries and from small quantities found in the liver and gut contents of the hunted kill. The Australian Aborigines of 50,000 years ago continued to hunt seasonal animals, shellfish and gather plant food. The Eskimos who relied on sea animals for their food seemed to have no absorbable carbohydrate at all in their diet. Civilisation has touched most of these tribes and is responsible for changing their eating habits due to ready access to a variety of processed foods.

The Island tribes inhabiting the Andaman and Nicobar islands (there are some six to seven of them belonging to this group of palaeolithic ancestors of not less than 40,000 years ago) hunt for food in a way reminiscent of the archaic lifestyles. Recent findings reveal that these tribes are more similar to some African people in respect of their DNA profiles. Exposure to civilisation of these Andaman and Nicobari tribes is already habituating them to look for quantities of cereal (cooked rice) and starchy-sweet food (ripe bananas). Now they demand these foods before they consent to be sent back, herded in closed vans[1]. The change in food habits brought about due to change from hunting and foraging in the wild to reaping a regular harvest in the post-agricultural settled life pattern and domestication of animals, profoundly affected the dietary composition of the human species in respect of consumption of carbohydrates, protein and fat (Brand-Miller and Colagiuri, 1999). Data compiled originally by Hirsch (1995) and discussed by these authors trace the estimated changes in the carbohydrate, protein and fat intake that have occurred in the last one million years.

Very low dietary calories from the slowly absorbed non-starch polysaccharides or fructose, 80 per cent of energy derived from high protein, or high fat characterised the pre-agriculture diet from a million years ago until 10,000 years ago. This was in sharp contrast to the significant increase in diet of carbohydrate content from agricultural cereals which provided 90 per cent of energy in the last one thousand years and a steep decline in protein and fat calories. This changed pattern of dietary intake has been progressive from the time of evolution to the time of the Industrial Revolution. In fact, just in the last 100 years or so, when modern food processing came into its own, the carbohydrate (cereal) intake as well as of fat were seen to rise and the protein consumption fell below the level of pre-agriculture diets. Simopoulos (1999), discussing the genetic variation in relation to nutrition observed that there was a significant difference in the diet of the hunter gatherer and the western diet and summed it up as follows:

- the hunter gatherers consumed low-energy dense, high protein (mostly from animal source) food which also had,
- low to moderate carbohydrate content but had,
- high fiber and low fat (vegetable and animal) which presented a low ratio (2.4) of omega 6 (w-6) to omega 3 (w-3) fatty acids in contrast to the highly energy dense, low (or moderate)

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animal/vegetable protein, low fiber, high fat (especially the saturated type from animal sources) and high (12.0) ratio of w-6: w-3 containing western diets.

The hunter gatherer exhibited high physical activity and we know that the average modern man generally indulges in low physical activity. In an actual worldwide survey of 181 hunter gatherer diets, it was found that the energy from plant food contributed 35 per cent of calories and the animal foods 65 per cent. The Paleolithic human diet is estimated to have contained 37 per cent protein, the Eskimo diet 45 percent, and the Australian aborigine diet 54 per cent. Physiologically, maximum protein intake should be 50 per cent (i.e., 300−375 g) per day. Carbohydrates in animal derived diets range from 1−17 per cent i.e., from 1−125 g from sources like milk, organs, gut contents and fat content in such diets would be 34−54 per cent derived from animals and tree nuts. After examining the metabolic parameters in regard to sports nutritional aspects, Chen (1999) arrived at the conclusion that the levels of physical activity/energy efficiency (PA/EE) in the modern version of our species is the lowest ever in our evolution. To site an example, *Homo erectus* of 1.7 million years ago with a body weight of 53.1 kg and *H. sapiens* of 45,000 years ago with a body wt. of 57.0 kg exhibited total energy expenditure/resting metabolic rates (TEE/RMR) ratio of 1.8; their daily foraging, gathering and hunting range was indeed wide covering several kilometers. A Kung tribesman was lighter in weight (46 kg), his TEE/RMR was 1.71 and he walked 14.9 km a day. The Aches of the tropical Paraguay were heavier (59.6 kg). Their TEE/RMR was 2.15 and they would cover an average distance of 19.2 km daily in search for food and hunting. A modern day athlete with a body wt. of 70 kg showed TEE/RMR of 1.7, (the same as the Kung tribe who is much lighter) and could run 12.1 km/day (probably in training). Our average office worker of today (average wt 70 kg) walks 0 km/day and has a TEE/RMR ratio of 1.18 which is the lowest ever, just as Chen (1999) observed.

For this transformation to have been effected, the agricultural humans would have had to settle down, lay down roots, till the land, plant and watch over cropping harvest, learn to store and process grains, meat, fruit and vegetables. According to Eaton and Konner (1985), evidence till date has indicated that the human genes have changed very little in the past 40,000 years and our nutritional needs were also determined then. Since that time, from a predominantly meat eating species we became cereal consumers in large measure. While our genotype adapted to carnivorous habit and insulin resistance has remained practically unchanged since 40,000 years ago as Cro-Magnon man, our modern high cereal/carbohydrate consumption pattern has resulted in hyper-insulinemia (Brand-Miller and Colagiuri, 1999). We are essentially carnivorous in nature as a result of evolutionary adaptations in diet and our antique genome is maladapted to deal with the onslaught of high carbohydrate diets.

More sedentary habits developed from acquiring skills, art and craft, language, script, technology and trade. It would be right to say that once they were out of Africa, the human species wandered in archaeologically and genetically traceable migratory patterns across the world. That the major civilisations established themselves by the side of the great rivers − the Euphrates, the Nile, the Indus and the Yangtze was no coincidence, but was indicative of the stage of evolution the species had reached and the intellect that became inherent. No doubt there were still the wandering nomadic tribes which moved with their animal herds from one region to another in search of new pastures. The history of our civilisation has been explained and discussed in great detail by several scholarly works. One such beautifully detailed work on the subject was produced by Will and Ariel Durante (1965) in the form of 'Story of our Civilization' in several volumes.

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